411

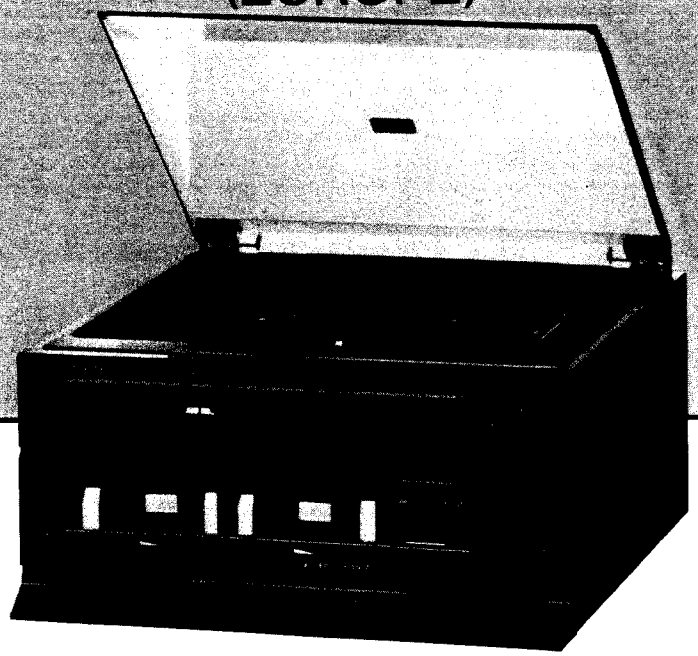
SERVICE MANUAL

FISHER

MC-715

Audio Component System

(EUROPE)



132 295 40

REFERENCE No. WM-18340

411

CONTENTS

Specifications 3
Functional Block Diagram 4
Disassembly Instructions 5
Cabinet & Chassis Exploded View 6,7
Parts List 8,9
Mechanism Exploded View 10,11,12
Mechanism Parts List 13
Turntable Exploded View 14
Turntable Parts List 15
Turntable Maintenance 15
Printed Circuit Board Alignment Points (Tuner Section) 16
Recommended Test Equipments 17
AM Tuner Alignment 17
FM Tuner Alignment 18
Dial Cord Stringing 19
AM Antenna Coil Stringing 19
Tape Deck Electrical Adjustments 20,21
P.C.B.Assy Parts List 22,23,24,25
Printed Circuit Board (Bottom View) 26,27,28,29,30
Point to Point Wiring Diagram 31,32
Schematic Diagram 33,34
Semiconductor Lead Identification 35
Integrated Circuit Block Diagram 36,37

PRODUCTION CHANGE NOTICE

FISHER

Date:April,2,1987

Please add this notice to the Service Manuals listed below

AUDIO COMPONENT SYSTEM

MC-715

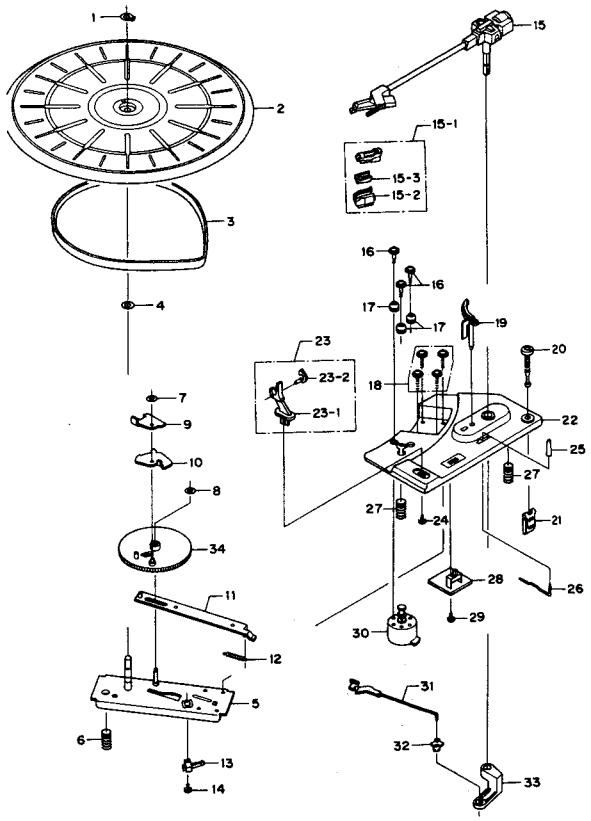
Effective from: Serial No. Running Change

(EUROPE) **REF:WM-18340** **Issue Number 1**

Three types of players are used for the MC-715, two made by Matsushita (FK-102HR-10 and FR-102HR) and one by BSR (BSRQ510-08). The MC-715 Service Manual only includes model FK-102HR-10. The exploded views and parts lists for the other two types can be found below.

RECORD PLAYER PARTS LIST/EXPLODED VIEW

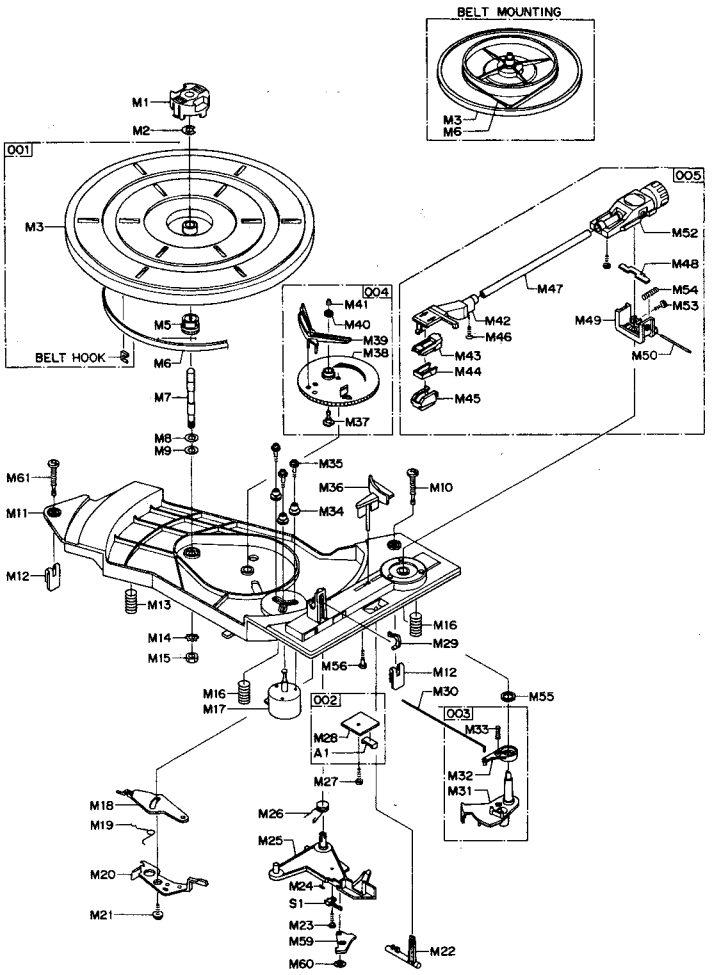
Ref. No.	Part No.	Description	Q'ty
	TURNTABLE		
	4-1342-00802	Player (FR-102HR)	1
1	XUB070FI	Retaining Clip	1
2	FFP-TTA108	Turntable Assy	1
3	FF-GBR011	Belt	1
4	FZ-WAP200	Thrust Washer	1
5	FF-UPAC51	Chassis Assy	1
6	FF-BCP069	Cushion Spring (B)	1
7	XUFM030VI	Retaining Clip	1
8	XUFM030VI	Retaining Clip	1
9	FFP-EPT029Z	Friction Link	1
10	FFP-EPT119	Startiong Link	1
11	FFP-ETA154	Subplate Assy (Including Spring)	1
12	FF-BTN035	Subplate Spring	1
13	VSZLSB1115B1	Leaf Switch	1
14	XTN020+J0050	Screw (Leaf Switch)	1
15	PA-357S-1	Pick-up Arm Assy	1
15-1	CZ-800-1	Cartridge Assy	1
15-2	6-2213-1A	Stylus Cover	1
15-3	6-2339-1	Stylus	1
16	FF-ESC039	Motor Mounting Screws	3
17	FF-GBR017	Cushion Rubbers	3
18	XTW030+S00080	Screw (Chassis)	4
19	FFP-ISP088	Pick-up Lifter	1
20	FF-ESC033	Transit Screw	1
21	FF-BPL004	Transit Spring	1
22	FFP-UCP026	Motor Board	1
23	FF-ETA125	Pick-up Stand Assy	1
23-1	FF-ISP077	Pick-up Stand	1
23-2	FF-ISP002	Pick-up Clamper	1
24	XTN030+J0050FY	Screw (Pick-up Stand)	1
25	FF-ISP036	Cueing Lever Knob	1
26	FF-ABR016	Cueing Lever	1
27	FF-BCP067	Cushion Spring (A)	2
28	FF-ETA152	PCB Assy	1
29	XTN030+J0050FY	Screw (PCB)	1



30	FF-ETA151	Partial Motor Assy	1
31	FFP-ETA153	Starting Lever Assy	1
32	FFP-ISP089	Adjusting Knob	1
33	FFP-ISP090	Return Link	1
34	FF-GGI006	Main Gear	1
	FA-RDU398	Lead Wire (Red)	1
	FA-RDU399	Lead Wire (Brown)	1
	FA-RDU400	Lead Wire (Yellow)	1
	FA-RDU401	Lead Wire (Black)	2

RECORD PLAYER PARTS LIST/EXPLODED VIEW

Ref. No.	Part No.	Description	Q'ty
	TURNTABLE		
	4-1342-00803	Player(BSR Q510-08)	1
M1	1072000500	Turntable adaptor	1
M2	3130000060	E ring 6ϕ	1
001	0006000500	Turntable assembly	1
(M3)	1008010500	Turntable w/boss	1
(M5)	2007000500	Turntable gear	1
M6	2020000500	Turntable belt	1
M7	1012000520	Turntable spindle	1
M8	2056000278	Poly washer 7.6ϕ x 12ϕ x 0.25t	1
M9	3021210022	Flat washer 5.2ϕ x 12ϕ x 1t	1
M10	1046000278	Transit screw	1
M11	1046100500	Base	1
M12	2038000278	Retaining clip	2
M13	2062000500	Base spring (A)	1
M14	3023110003	W Gear-0003-ZN3A	1
M15	3032100050	Nut 50 ZN3A	1
M16	2056000500	Base spring	2
M17	4031210134	Motor assembly(MMI-6S2R2D)	1
M18	2002000500	Speed shift cam 45	1
M19	2023075410	Speed shift cam spring	1
M20	1006000500	Speed shift cam 33	1
M21	8761300810	7 (Taptite-P) CUP 3008 ZN3A 10D	1
M22	1005200500	Cue lever	1
M23	8711200600	7 (Taptite-P) PAN 2006 ZN3A	1
M24	2002001306	Securing rubber	1
M25	2080000500	Control arm	1
M26	2012000500	Control arm spring	1
M27	8741300800	7 (Taptite-P) BID 3008 ZN3A	1
002	C041051020	Motor supply PCB assembly	1
(M28)	4041051020	Motor supply PCB	1
(A1)	4490501001	S5B-XH side base	1
M29	1019000500	Pick-up tube hook	1
M30	2044000500	Trip rod	1
003	0003000500	Quadrant assembly	1
(M31)	2004400500	Quadrant	1
(M32)	2005200500	Trip clutch	1
(M33)	2042005015	Trip clutch spring	1
M34	2069000500	Grommet (B)	3
M35	2015000284	Screw	3
M36	1070000500	Lift platform	1
004	0004000500	Cam gear assembly	1
(M37)	2058030084	Drive pivot	1
(M38)	2006200500	Cam gear	1
(M39)	2008000500	Trip pawl	1
(M40)	2057030084	Drive pivot washer	1
(M41)	2067030084	Drive spring	1
005	0035000500	Pick up arm assembly	1
(M42)	1012000500	Pick up head	1
(M43)	5230715130	Cartridge (NS-130D) w/stylus	1
(M44)	5240715130	Stylus (DIAMOND)	1
(M45)	5260715130	Cartridge cover	1
(M46)	8345230500	3 (Tapping-1) BID 2305 NI3E	1
(M47)	1010000501	Pick up tube	1
(M48)	2019000500	Pick up hinge lock	1
(M49)	1014000500	Pick up hinge bracket	1
(M50)	2010000500	Pivot pin	1



Ref. No.	Part No.	Description	Q'ty
(M52)	1022000500	Pick up tube body	1
(M53)	3011813014	2 (Machine ISO) PAN 3014 ZN3A	1
(M54)	2017000500	Set down spring	1
M55	2024000500	Poly washer 9.2ϕ x 13ϕ x 0.4t	1
M56	2057000500	7-BID 3014 ZN3A	1
M59	2043100500	Cam	1
M60	2000000631	Push nut 3ϕ	1
M61	1047000278	Transit screw	1
	OTHERS		
S1	4407000047	Leaf switch	1
A2	9011000278	Poly bag 36 x 46 cm	1
A3	9051000500	Rating label	1
A4	9052000500	Carton	1
A5	5280020010	UL tube 1ϕ x 10 mm	1
A6	9004000500	Inner plate	1
A7	9005000500	Inner plate (A)	1

NOTES:

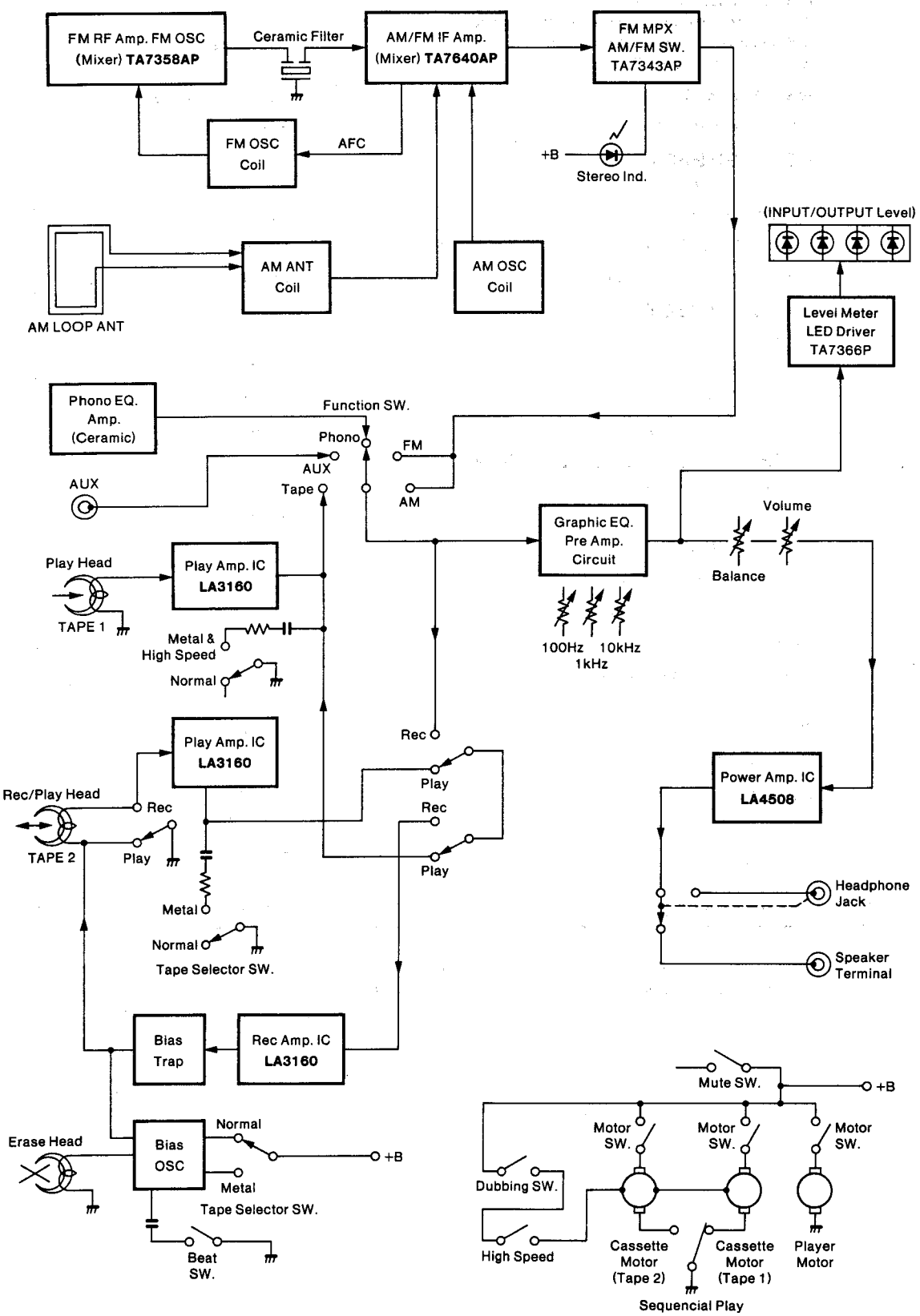
1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

SPECIFICATIONS

AUDIO COMPONENT SYSTEM	MC-715
AMPLIFIER SECTION **Minimum RMS sine wave power per channel at 8 ohms within rated bandwidth at no more than rated T.H.D.**	**3.5 Watts x 2**
Power Bandwidth	**100 Hz – 10 kHz**
Total Harmonic Distortion	**5.0 %**
FM TUNER SECTION Usable Sensitivity	4.8 μV / 18.82 dBf
Alt. Chennel Selectivity	34 dB
Signal-to-Noise Ratio	40 dB
Stereo Separation at 1 kHz	25 dB
AM TUNER SECTION Usable Sensitivity	600 μV/m
Selectivity	26 dB
Signal-to-Noise Ratio	42 dB
Image Frequency Rejection	40 dB
CASSETTE TAPE DECK SECTION Wow and Flutter (WRMS)	0.15 %
Signal-to-Noise Ratio	43 dB
Channel Separation	36 dB
Frequency Response (Fe_2O_3)	125 Hz – 10 kHz
Harmonic Distortion (Fe_2O_3)	2 %
Erase Ratio	60 dB
TURNTABLE SECTION Wow & Flutter (WRMS)	0.2 %
Rumble (DIN-B)	–55 dB
Tracking Force Range	1.5 ~ 5 g
GENERAL SECTION Power Requirements (50 Hz)	220 V AC
Power Consumption	35 Watts
Dimensions (W.x H x D)	400 x 222 x 416 mm
Weight (approx.)	5.4 kg

Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

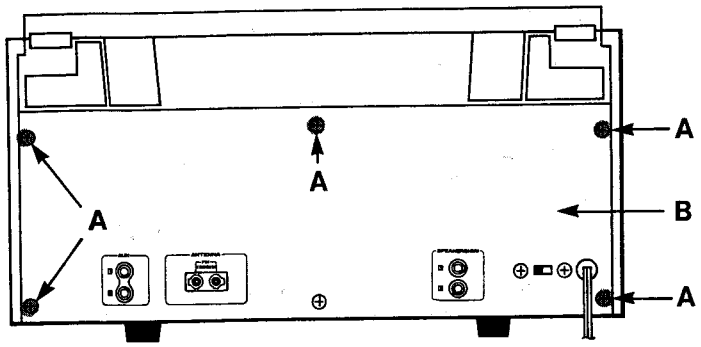
FUNCTIONAL BLOCK DIAGRAM



DISASSEMBLY INSTRUCTIONS

A. REMOVAL OF PLAYER (TURNTABLE)

1. Remove the screws fastening on the Top of the Turntable. (Fig. 1)
2. Lift the rear of the Turntable and disconnect the Connector with the shield wires and the Power supply cord for the Turntable motor.
3. Remove the Turntable from Cabinet by pulling it backward.

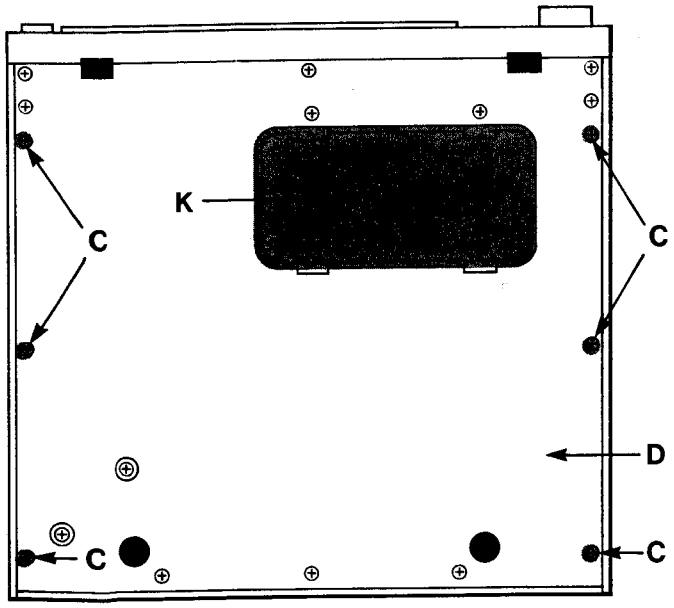


(REAR VIEW)

Fig. 1

B. REMOVAL OF CABINET

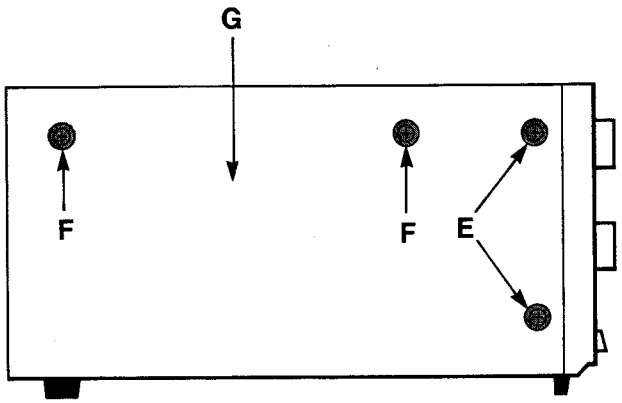
1. Remove the screws **A** fastening Cabinet Rear Panel **B**.(Fig. 1)
2. Remove the screws **C** fastening Cabinet Bottom Plate **D**. (Fig. 2)



(BOTTOM VIEW)

Fig. 2

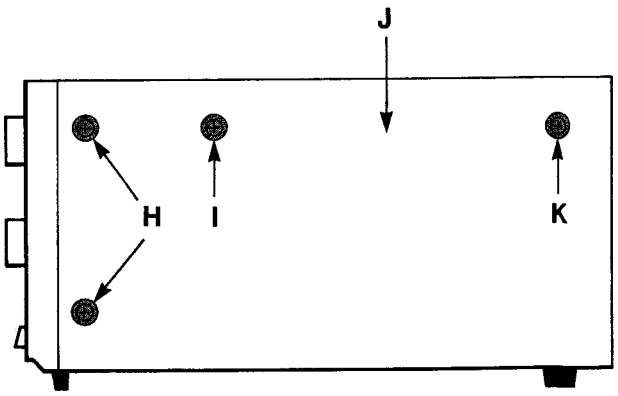
3. Remove the screws **E** and **F** fastening the left side of Cabinet **G**. (Fig. 3)



(LEFT SIDE VIEW)

Fig. 3

4. Remove the screw **H** and **I** fastening the right side of Cabinet **J**.
5. Lift the front panel side of Cabinet in the direction of the arrow and pull it backward. Then, Cabinet Top will be separated from the Unit. (Fig. 4)



(RIGHT SIDE VIEW)

Fig. 4

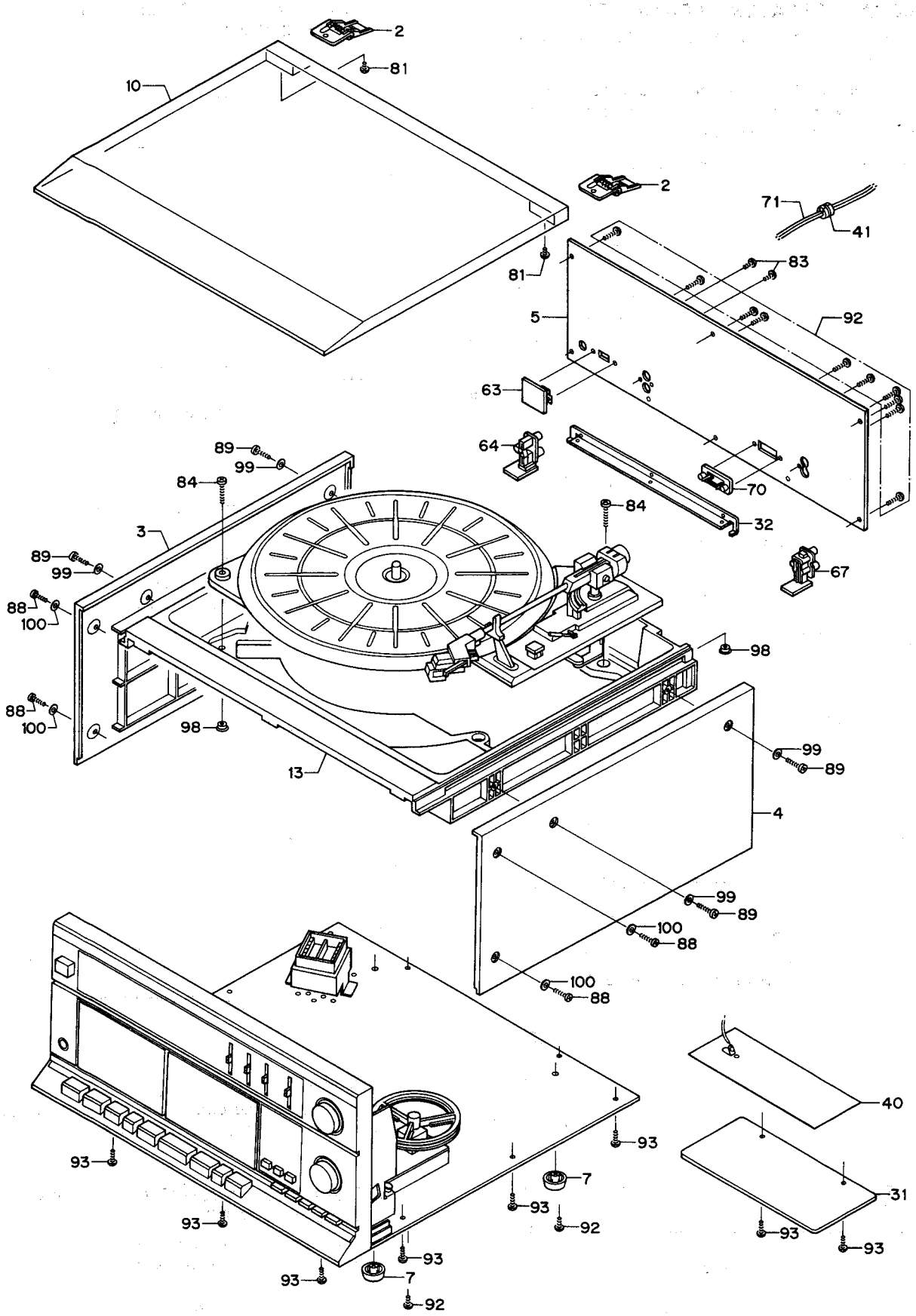
ATTENTION:

When removing the cabinet on the right side, be careful not to disconnect the lead of the AM Antenna Coil.

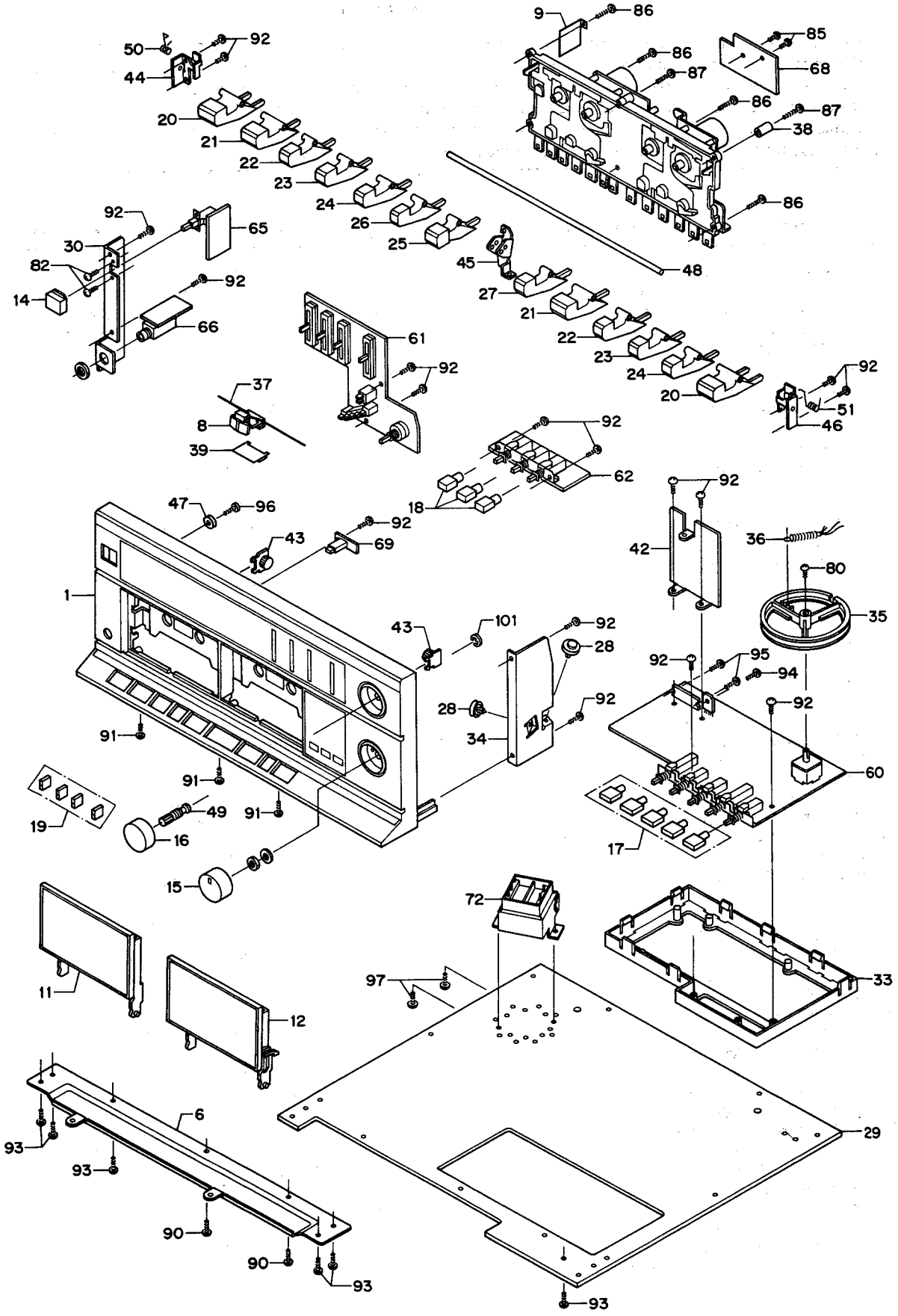
C. REPAIR AND ADJUSTMENT OF PRINTED CIRCUIT BOARD

1. The removal of Cabinet Bottom Plate **K** will give an access to the repair or adjustment work of Main P.C.Board.
   Note: It is not necessary to remove Cabinet.

CABINET & CHASSIS EXPLODED VIEW (1)



CABINET & CHASSIS EXPLODED VIEW (2) (Continued)



CABINET & CHASSIS PARTS LIST

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

Ref. No.	Part No.	Description	Q'ty
	PACKING PARTS LIST		
	131-6-1169-17737	Box Corrugate-Exp.	1
	131-6-2119-02031	Bag Polyethylene-Exp.	1
	131-6-2119-02360	Bag Polyethylene-Exp.	1
	131-6-3009-35721	Pad (Left)	1
	131-6-3009-35731	Pad (Right)	1
	131-6-3009-35830	Pad (T.T)	1
	131-6-3069-16350	Patching Sheet	1
	131-6-4159-40900	Notes (Caution)	1
	131-6-4159-41000	Notes	1
	141-2-2449-56900	Sheet	1
	ACCESSORIES PARTS LIST		
	4-2449-20260	FM Antenna	1
	131-6-2719-10401	Bag Fan	1
	142-6-4119-33196	Explanatory Booklet	1
	CABINET & CHASSIS PARTS LIST		
	141-2-4729-04100	Lug	1
	141-2-4729-11200	Lug	1
1	131-0-1016-45203	Panel Decorate Assy	1
	131-2-1203-64800	Panel Control Equalizer	1
	131-2-1203-64900	Panel Control	1
	131-2-1203-65000	Panel Control (Plate)	1
	141-2-1519-24700	Reflector	2
	131-2-1203-65702	Panel Control(Oparation) (Center)	1
	131-2-1203-65703	Panel Control(Oparation) (Left)	1
	131-2-1203-65704	Panel Control(Oparation) (Right)	1
2	131-0-2002-17200	Hinge Assy	2
3	131-2-1101-50700	Cabinet Left	1
4	131-2-1101-50800	Cabinet Right	1
5	131-2-1102-57100	Rear Cover	1
6	131-2-1105-32200	Cover Bottom	1
7	131-2-1801-14600	Leg	2
8	131-2-4101-23400	Pointer	1
9	131-2-6103-25400	Cover Shield	1
10	141-0-1249-36200	Lid Assy	1
	131-2-1107-26401	Lid (Dust Cover)	1
	131-2-1310-22106	Name Plate	1
	131-2-2904-12300	Pad Lid	2
11	141-0-1249-38600	Lid Cassette Assy (Left)	1
	141-2-1249-53400	Lid Cassette (Left)	1
	141-2-1519-49400	Panel Cassette (Left)	1
	141-2-1519-49600	Panel Cassette	2
12	141-0-1249-38700	Lid Cassette Assy (Right)	1
	141-2-1249-53500	Lid Cassette (Right)	1
	141-2-1519-49500	Panel Cassette (Right)	1
	141-2-1519-49600	Panel Cassette	1
13	141-2-1129-16400	Cabinet Top	1
14	131-2-1601-86202	Knob (Power Switch)	1
15	131-2-1601-92300	Knob (Volume)	1
16	131-2-1601-92400	Knob (Tuning)	1
17	131-2-1601-95600	Knob (Function)	5
18	131-2-1601-95700	Knob (Tape Selector)	3
19	131-2-1601-95800	Knob (Graphic Equalizer)	4
20	141-2-1659-61500	Knob (Eject)	2
21	141-2-1659-61600	Knob (Play)	2
22	141-2-1659-61700	Knob (Rew)	2
23	141-2-1659-61800	Knob (FF)	2
24	141-2-1659-61900	Knob (Pause)	2
25	141-2-1659-62000	Knob (Dubbing)	1
26	141-2-1659-62100	Knob (Hi-Speed)	1
27	141-2-1659-62200	Knob (Rec)	1
28	131-0-3020-11000	Pully Assy	2
29	131-2-1105-31900	Plate Bottom	1
30	131-2-1116-22800	Frame	1
31	131-2-1410-34000	Cover	1
32	131-2-3202-14900	Metal Reinf	1
33	131-2-3614-28200	Mount P.C.B.	1
34	131-2-4106-25700	Metal Mount Pully	1
35	131-2-4109-11500	Drum	1
36	131-2-4111-00200	Spring Rope	1
37	131-2-4112-10201	Rope Dial	1
38	131-2-4208-49600	Spacer	1
39	131-2-5205-19100	Cushion	1
40	131-2-6103-25100	Cover Shield	1
41	131-2-6111-25400	Bushing (Power Cord)	1
42	131-2-6201-36300	Plate Heat Sink	1
43	141-0-5519-08501	Gear Eject Assy	2
44	141-2-2629-08900	Bracket Button (L)	1
45	141-2-2629-09000	Bracket Button (B)	1
46	141-2-2629-09100	Bracket Button (R)	1
47	141-2-5519-03300	Roller Dial A	1
48	141-2-6129-07200	Spindle Botton	1
49	141-2-7519-58501	Shaft Dial	1
50	141-2-8549-33800	Spring (Left)	1
51	141-2-8549-33900	Spring (Right)	1
52	131-2-6110-25400	Shelter Light	1
	ELECTRICAL PARTS LIST		
60	141-0-1939-12481	Main P.C.B. Assy	1
61	141-0-1939-12490	Equalizer P.C.B. Assy	1
62	141-0-1939-12500	Switch P.C.B. Assy	1
63	141-0-1939-12520	Beat Switch P.C.B. Assy	1
64	141-0-1939-12530	Speaker Terminal P.C.B. Assy	1
65	141-0-1939-12542	Power Switch P.C.B. Assy	1
66	141-0-1939-12550	Headphone P.C.B. Assy	1
67	141-0-1939-12560	AUX P.C.B. Assy	1
68	141-0-1939-12570	Tape Control P.C.B. Assy	1
69	141-0-1939-12580	FM Ind. P.C.B. Assy	1
70	4-2379-71010	Terminal 2P	1
71	⚠ 4-2432-00501	Power Cord	1
72	⚠ 4-2512-23420	Power Trans	1

CABINET & CHASSIS PARTS LIST (Continued)

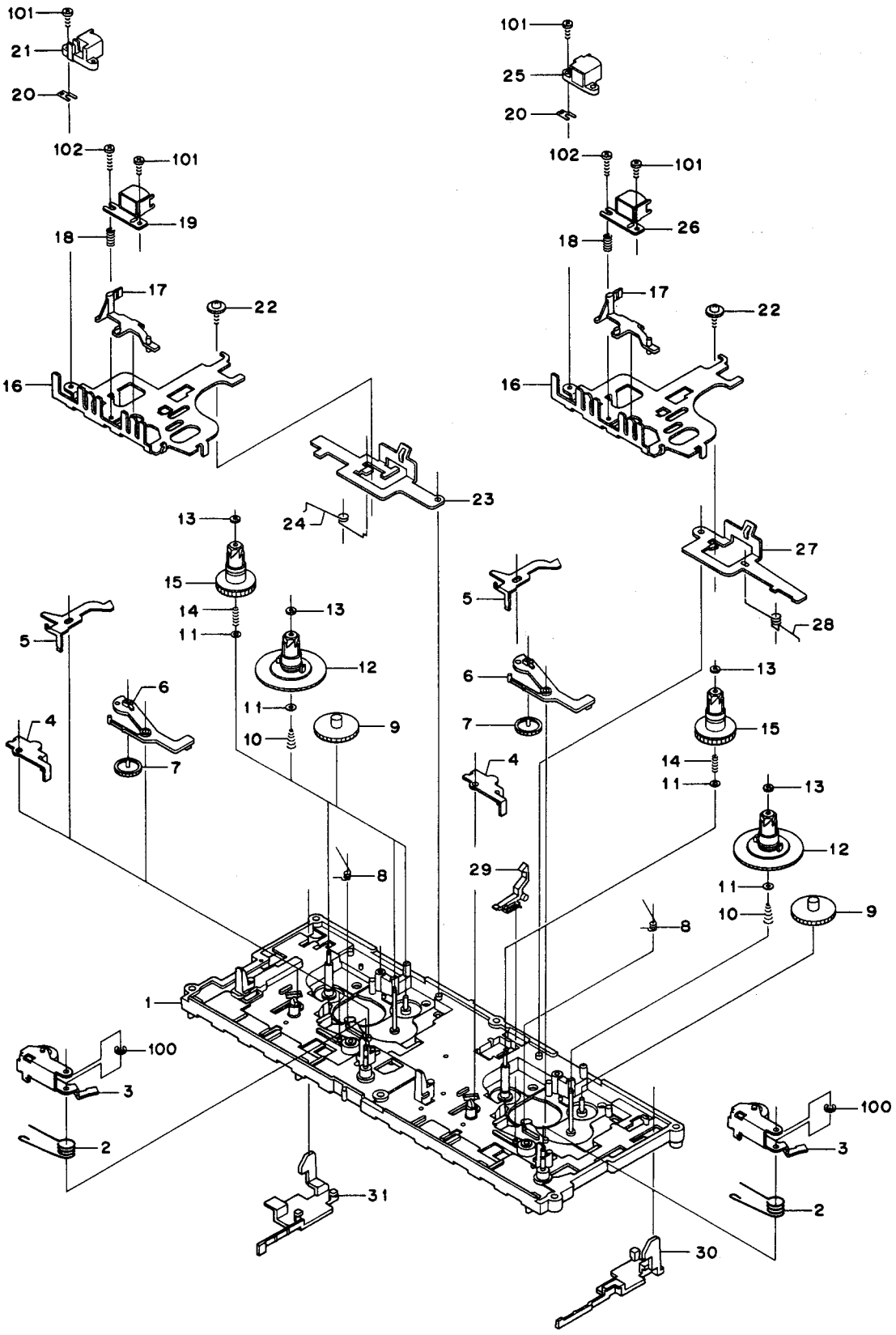
Ref. No.	Part No.	Description	Q'ty
	SCREW PARTS LIST		
80	101-3-1302-60811	Screw, Pan Hd., +M2.6x8	1
81	101-3-1303-00616	Screw, Pan Hd., +M3.0x6	2
82	101-3-1303-00611	Screw, Pan Hd., +M3.0x6	2
83	101-3-1702-60811	Screw, Bind Hd., +M2.6x8	2
84	101-3-1704-02513	Screw, Bind Hd., +M4.0x25	2
85	143-3-1302-60611	Screw, Pan Hd. Tapping-B, +M2.6x6	2
86	143-3-1303-02011	Screw, Pan Hd. Tapping-B, +M3.0x20	4
87	143-3-1303-03011	Screw, Pan Hd. Tapping-B, +M3.0x30	2
88	143-3-1703-01018	Screw, Bind Hd. Tapping-B, +M3.0x10	4
89	143-3-1704-01418	Screw, Bind Hd. Tapping-B, +M4.0x14	4
90	102-3-1903-00811	Screw, Brazier Hd. Tapping-1, +M3.0x8	2
91	143-3-1903-00611	Screw, Brazier Hd. Tapping-B, +M3.0x6	3
92	143-3-1903-01011	Screw, Brazier Hd. Tapping-B, +M3.0x10	30
93	143-3-1903-01211	Screw, Brazier Hd. Tapping-B, +M3.0x12	15
94	143-3-1903-00811	Screw, Brazier Hd. Tapping-B, +M3.0x8	1
95	131-2-4201-25201	Screw, Brazier Hd. Tapping-B, +M3.0x8 Sems	2
96	141-2-4219-14000	Screw	1
97	131-2-4201-27802	Screw (C Tite)	2
98	141-2-4179-06800	Nut	2
99	131-2-4203-84504	Washer, 4.5x12x1.0,B1	4
100	131-2-4203-83225	Washer, 3.2x12x0.8,B1	4
101	112-3-1304-00040	E Ring, M4.0	1
102	131-2-4202-12901	Flange Nut	2

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

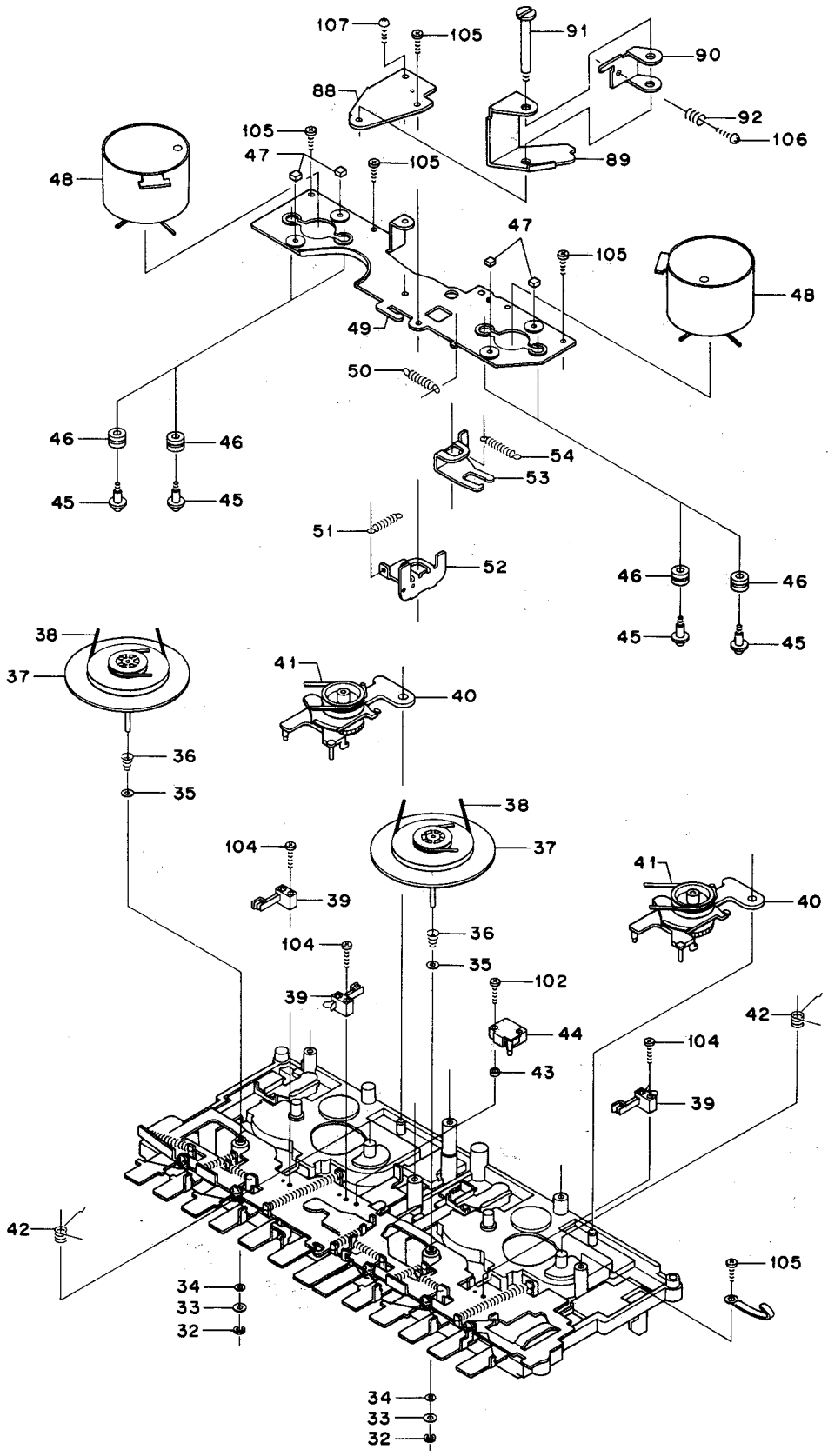
MECHANISM EXPLODED VIEW

(Chssis Top)



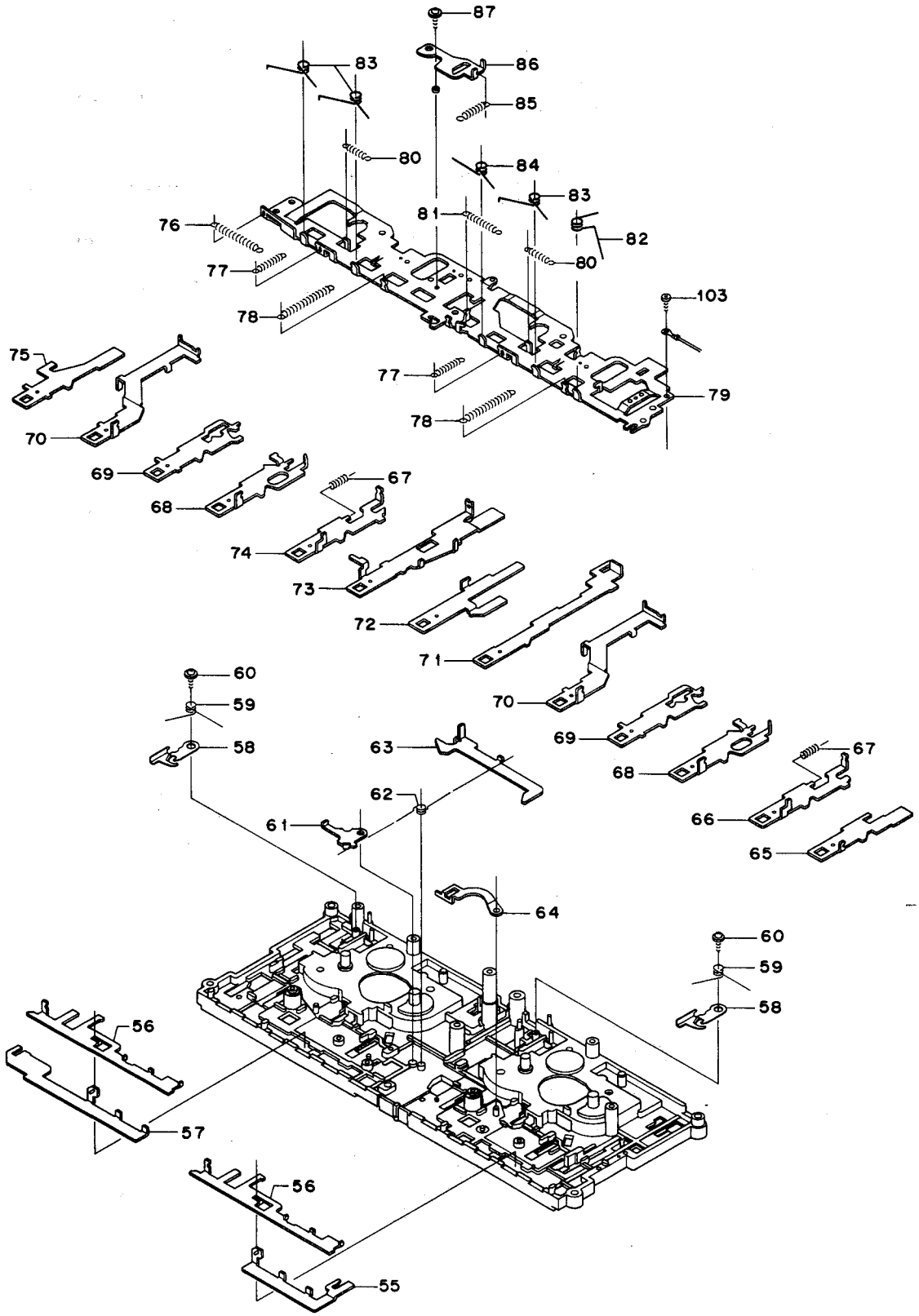
MECHANISM EXPLODED VIEW (Continued)

(Chassis Bottom 1)



MECHANISM EXPLODED VIEW (Continued)

(Chassis Bottom 2)



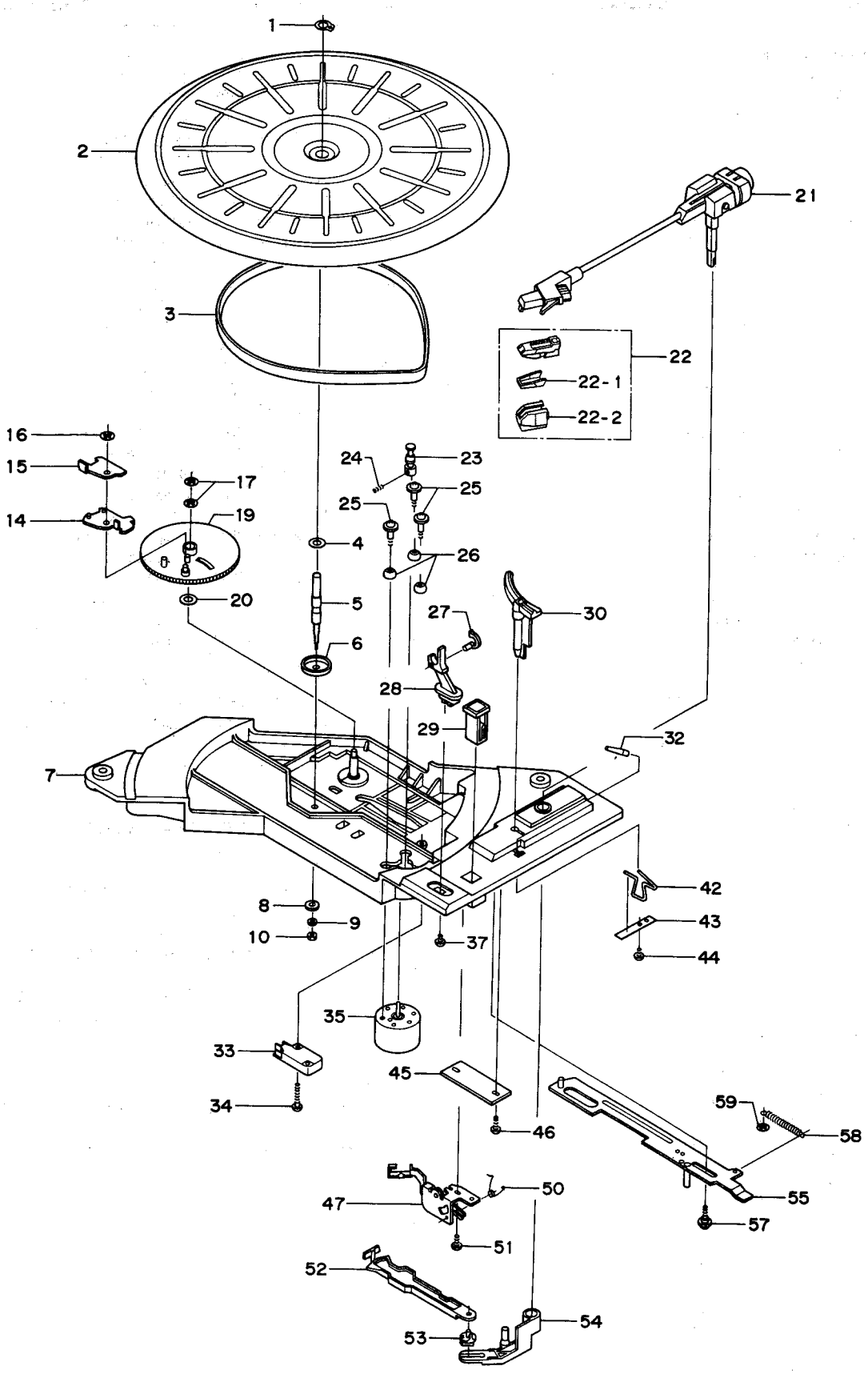
MECHANISM PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	MECHANISM PARTS LIST		
C1	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C2	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
W117	4-2359-79037	Connector 1P Assy	1
	141-2-4729-04100	Lug	1
1	141-0-3119-26300	Chassis Assy	1
2	141-2-8529-30300	Spring Pinch Roller	2
3	141-0-5419-03201	Pinch Roller Assy	2
4	141-2-7429-00300	Lever Cue Review	2
5	141-2-7429-00200	Lever ASO	2
6	141-2-7439-49200	Arm Take-up	2
7	141-2-5519-65200	Gear Take-up	2
8	141-2-8529-32400	Spring Take-up	2
9	141-2-5519-65400	Gear F FWD	2
10	141-2-8559-15200	Spring Reel	2
11	141-2-4539-27601	Washer, M2.1x3.5x0.13	2
12	141-0-5319-09800	Fix Take-up Assy	2
13	141-2-4539-15700	Washer	4
14	141-2-8559-15400	Spring Supply	2
15	141-2-5319-17400	Fix Supply Reel	2
16	141-2-7319-72800	Base Slide	2
17	141-2-7419-98500	Lever Sensor ASO	2
18	141-2-8559-14900	Spring Head	2
19	4-2429-72191	Play Head [HD1]	1
20	141-2-3529-18100	Spacer Head	2
21	141-2-8219-36700	Guide Tape	1
22	141-2-4219-05400	Screw Washer	2
23	141-2-7419-99700	Lever Cassette Fix Left	1
24	141-2-8529-30700	Spring Cassette Lock Left	1
25	4-2429-72200	Erase Head [HD3]	1
26	4-2429-72190	R/P Head [HD2]	1
27	141-2-7419-99800	Lever Cassette Fix Right	1
28	141-2-8529-30600	Spring Cassette Lock Right	1
29	141-2-8419-11700	Interlock Lever	1
30	141-2-7319-71100	Plate Lock Lid Left	1
31	141-2-7319-71200	Plate Lock Lid Right	1
32	141-2-4579-04400	E Ring	2
33	141-2-4539-19800	Washer, M2.1x5.0x0.13	2
34	141-2-4539-27603	Washer, M2.1x3.5x0.25	2
35	141-2-4539-35500	Washer, M2.1x4.1x0.25	4
36	141-2-8559-04700	Spring Pulley	2
37	141-0-5219-13200	Flywheel Compl	2
38	141-2-5649-27100	Belt Drive	2
39	4-2319-74360	Leaf Switch	3
40	141-0-5519-12800	Idler Assy	2
41	141-2-5649-27700	Belt Wind	2
42	141-2-8529-32300	Spring Arm Idler	2
43	141-2-8259-00300	Spacer Brake	1
44	4-2319-78590	Lever Switch 1-2	1
45	141-2-4219-30100	Screw	4
46	141-2-4459-11800	Cushion Motor	4
47	141-2-4469-21300	Cushion	4
48	4-5279-71501	Motor	2
49	141-2-3789-10900	Bracket Motor	1
50	141-2-8519-01800	Spring Rewind Roller	1
51	141-2-8519-78601	Spring Slide Base	1
52	141-2-8429-07900	Lever R/P Switch	1
53	141-2-8429-07700	Lever Speed Switch	1
54	141-2-8519-14300	Spring Lever Cassette Lid	1
55	141-2-7319-72400	Plate Switch Motor Left	1
56	141-2-7319-72600	Plate Lock	2
57	141-2-7319-72500	Plate Switch Motor Right	1
58	141-2-7419-99400	Lutch Pause	2
59	141-2-8529-30400	Spring Pause Lutch	2
60	141-2-4219-13201	Screw Washer	2
61	141-2-7419-99600	Lever Stopper Rec	1
62	141-2-8529-31000	Spring Stop Rec	1
63	141-2-7319-77400	Plate Amp. Switch	1
64	141-2-7419-99500	Lever Play	1
65	141-2-7319-72200	Rod Stop Eject Left	1
66	141-2-7319-71800	Rod Play	1
67	141-2-8559-14300	Spring Base Slide	2
68	141-2-7319-71700	Rod Rewind	2
69	141-2-7319-71600	Rod F FWD	2
70	141-2-7319-71500	Rod Pause	2
71	141-2-7319-72100	Rod Speed Switch	1
72	141-2-7319-72000	Rod Dubbing	1
73	141-2-7319-71900	Rod Record	1
74	141-2-7319-77200	Rod Play	1
75	141-2-7319-71400	Rod Stop Eject Right	1
76	141-2-8519-38700	Spring Lever Head	1
77	141-2-8549-34800	Spring Lever ASO	2
78	141-2-8549-33700	Spring Rod Base	2
79	141-2-3519-77200	Bracket Rod	1
80	141-2-8549-37400	Spring Plate Motor	2
81	141-2-8519-03600	Spring Shut Off Lever	1
82	141-2-8529-30900	Spring Rod Stop	1
83	141-2-8529-30200	Spring Rod	3
84	141-2-8529-30100	Spring Rod Pause	1
85	141-2-8549-04500	Spring Eject	1
86	141-2-7419-99900	Lever Dubbing	1
87	141-2-4219-42100	Screw	1
88	141-2-3119-27500	Metal Mount (Rec)	1
89	141-2-3119-27600	Metal Mount (Rec Lever)	1
90	141-2-3119-28000	Metal Mount (Rec Lever Adjust)	1
91	141-2-4219-42400	Screw	1
92	141-2-8519-34000	Spring Adzimuth	1
	SCREW & E RING PARTS LIST		
100	112-3-1302-00012	E Ring, M2.0	2
101	101-3-1702-00511	Screw, Bind Hd., +M2.0x5	4
102	101-3-1702-00711	Screw, Bind Hd., +M2.0x7	3
103	143-3-1702-00611	Screw, Bind Hd. Tapping-B, +M2.0x6	1
104	143-3-1702-01211	Screw, Bind Hd. Tapping-B, +M2.0x12	3
105	143-3-1702-60811	Screw, Bind Hd. Tapping-B, +M2.6x8	5
106	101-3-1303-00811	Screw, Pan Hd., +M3.0x8	1
107	143-3-1902-60611	Screw, Brazier Hd. Tapping-B, +M2.6x6	1
108	143-3-1902-60811	Screw, Brazier Hd. Tapping-B, +M2.6x8	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

TURNTABLE EXPLODED VIEW



TURNTABLE PARTS LIST

Ref. No.	Part No.	Description	Q'ty
	TURNTABLE		
	4-1342-00801	Player (FK-102HR-10)	1
1	XUB070FI	Retaining Clip	1
2	FFP-TTA101-5	Turntable Assy	1
3	FF-GBR009	Belt	1
4	FZ-WAP200	Thrust Washer	1
5	FF-TTS061-R	Turntable Shaft	1
6	FZ-WAM129	Turntable Washer	1
7	FFP-UCP024	Motor Board	1
8	FZP-WAM003	Washer	1
9	XWA040BFW	Spring Washer	1
10	XNG040E	Nut	1
14	FF-EPT028	Starting Link	1
15	FF-EPT029	Friction Link	1
16	XUFM030VI	Retaining Clip	1
17	XUFM040VI	Retaining Clip	2
19	FB-GGG260	Main Gear	1
20	FZ-WAP270	Thrust Washer	1
21	PA-311S-8	Pick-up Arm Assy	1
22	CZ-800-1	Cartridge Assy	1
22-1	6-2339-1	Stylus	1
22-2	6-2213-1A	Stylus Cover	1
23	FF-MCP117	Capstan	1
24	KT-26030UF	Screw	1
25	FF-ESC039	Motor Mounting Screw	3
26	FF-GBS017	Cushion Rubber	3
27	FF-ISP084	Pick-up Clamper	1
28	FF-ISP077	Pick-up Stand	1
29	FF-ISP082	Speed Change Knob	1
30	FF-ISP081	Pick-up Lifter	1
32	FF-ISP036	Cueing Knob	1
33	K2	Switch	1
34	XTN030+J0180FX	Screw	1
35	MMI-5P2RK3	Motor	1
37	XTN030+J0050FY	Screw	1
42	FF-ABR015	Cueing Lever	1
43	FF-BPP024	Spring Plate	1
44	XTN030+J0050FY	Screw	1
45	FF-ETA146	Print Base Assy	1
46	XTN030+J0080FX	Screw	1
47	FF-ETA141	Speed Change Assy	1
50	FF-BCL013	Moderation Spring	1
51	XTW030+J0060FX	Screw	1
52	FF-EPT115	Starting Lever	1
53	FF-ISP083	Adjusting Knob	1
54	FF-EPT116	Return Link	1
55	FF-ETA142	Sub Plate Assy	1
57	FF-ESC038	Sub Plate Screw	1
58	FF-BTN035	Sub Plate Spring	1
59	XUFM030VI	Retaining Clip	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

TURNTABLE MAINTENANCE

CLEANING THE STYLUS

Dust particles often build up around the stylus. If the build-up becomes excessive it will result in noisy sound reproduction and will eventually shorten the lives of both the record and the stylus. Should this occur, do not remove the dust with your fingers or a tool. Lift the tonearm by its handle and blow the dust away or use a stylus brush.

REPLACING THE STYLUS

For distortion-free sound reproduction, replace the stylus after 1000 to 2000 LP plays. To remove the old stylus, pull the stylus down and then forward, away from the tonearm as shown in Fig.1. To install a new stylus, insert the stylus in it's proper place until a click is heard.

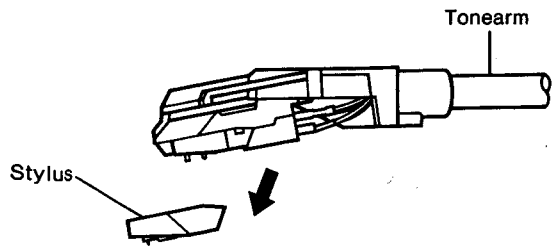


Fig.1

REPLACING THE CARTRIDGE

Insert a small screwdriver on the front retaining clip and twist it a little until it releases the cartridge assembly as shown in Fig.2. Unplug the four wires from cartridge. Plug the four wires into the replacement cartridge. Be sure to plug the wires (color coded) into the terminals as shown in Fig.3. Place the lip of the cartridge (located at the rear of the cartridge) in the slot in the tonearm and push the cartridge up until it clicks into place.

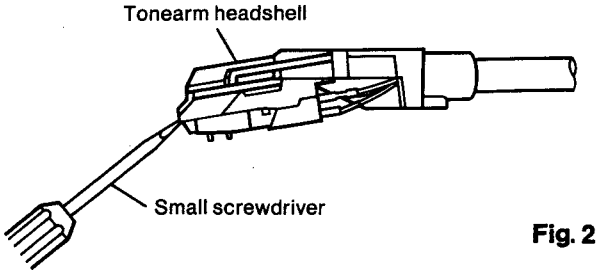
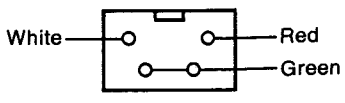


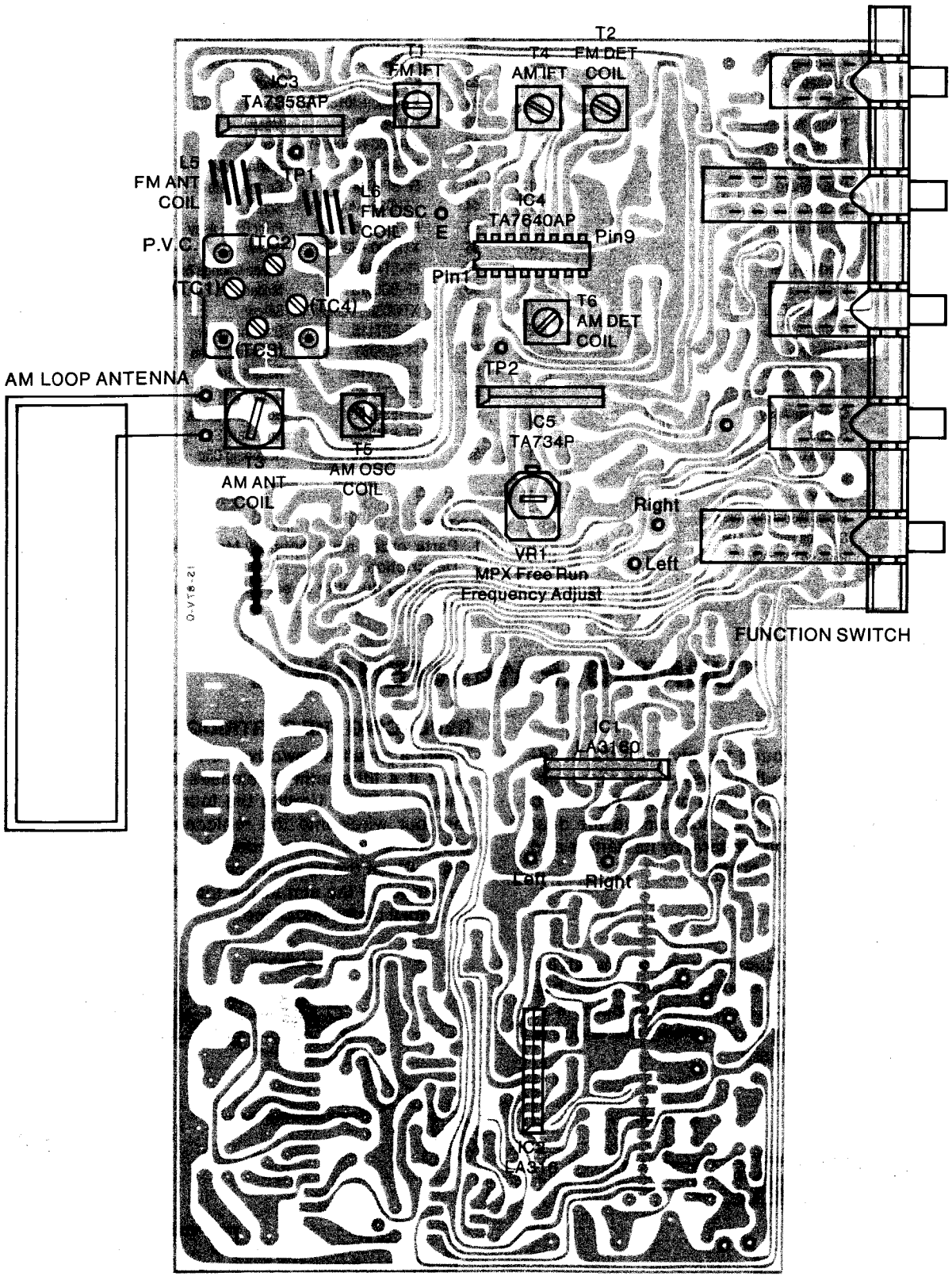
Fig. 2



Location of color coded wires on rear of cartridge

Fig. 3

PRINTED CIRCUIT BOARD ALIGNMENT POINTS
(TUNER SECTION)



RECOMMENDED TEST EQUIPMENTS

The following test equipments are recommended to completely test and align the Tuner:

- FM Standerd Signal Generator
  [87.5 ~ 108MHz 20~120dBμ /75Ω]
- AM Standerd Signal Generator
  [520 ~ 1710kHz 20~130dBμ /50Ω]
- FM Stereo Standerd Signal Generator
  [20 – 1k – 15kHz Main 90% Pilot 9%]
- Radio IF Generator Scope
  [450kHz ± 10kHz 10.7MHz ± 0.3MHz]
- DC Voltmeter [Hight Impedance 1MΩ]
- Line Voltage Isolation Transformer
- Accurately Calibrated AC Voltmeter
- AM Test Loop Antenna
- AM Dummy Antenna
- FM Dummy Antenna [75Ω – 300Ω Balanced Type]
- Distortion Meter
- Oscilloscope

AM TUNER ALIGNMENT

AM ALIGNMENT – FUNCTION switch to AM position.
Maintain generator output as low as possible for suitable indication.

Note:
Perform this alignment after FM Tuner Alignment.

Standard test frequency 1kHz and Modulation 30% at AM

ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
1. AM IF ALIGNMENT	Connect 455kHz Radio IF Genescope output to IC4 (Pin No.1) and ground terminal. Use 100pF Capacitor in series with generator output lead.	Position of non-interference Minimum Frequency.	Connect Radio IF Genescope input to TP2 and ground terminal.	Adjust AM IFT (T4) for maximum gain and best symmetry. Keep signal low enough for noise on responce.
				Adjust AM DET Coil (T6) for maximum gain output.
2. AM RF TRACKING ALIGNMENT (515kHz)	Connect Standard Loop Antenna to output terminal of AM RF Signal Generator. Place Loop Antenna 60cm away from Loop Antenna of MC-715. Generator setting to 515kHz. Modulate with 1kHz (30% modulation).	Center of 515kHz calibration mark on dial.	Connect AC VTVM and Oscilloscope to TP2 and ground terminal.	Adjust AM OSC Coil (T5) and AM ANT Coil (T3) for maximum gain output.
3. (1670kHz)	Change generator setting to 1670kHz.	Center of 1670kHz calibration mark on dial.	Same as above.	Adjust AM OSC Trimmer (TC4) and AM ANT Trimmer (TC3) for best curve form and maximum deflection.
Note: Repeat Items 2 and 3, and confirm that Tracking Error is minimized and best sensitivity is obtained at each frequency point. Then, set generator to 1000kHz and confirm that the pointer is correctly set on the dial plate.				

Use a screwdriver with plastic grip for all adjustments.

CAUTION: This precision high-fidelity instrument should be serviced only by qualified personnel, trained in the repair of transistor equipment and printed circuitry.

FM TUNER ALIGNMENT

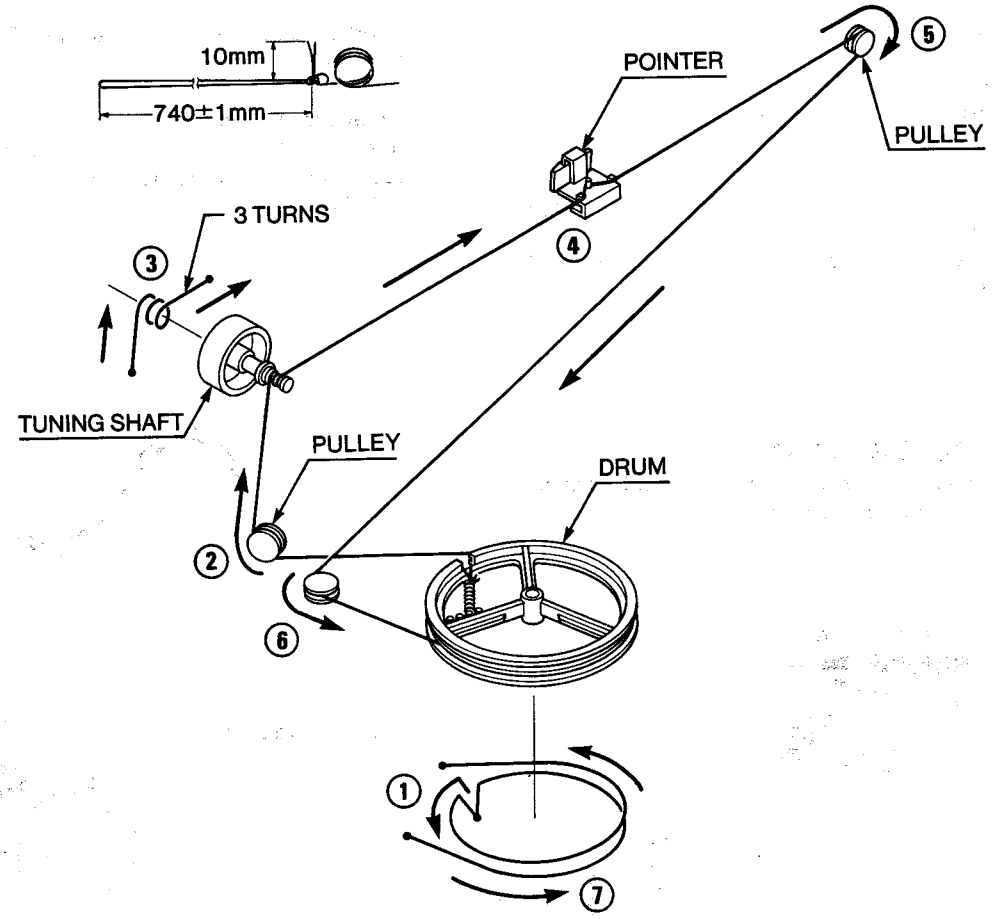
FM ALIGNMENT – FUNCTION switch to FM STEREO

Standard test frequency 1kHz and deviation ±75kHz

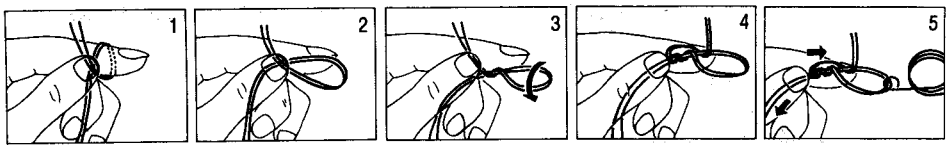
ITEM	GENERATOR	DIAL SETTING	INDICATOR	PROCEDURE
Note: The FM IF circuit utilizes a non-turnable ceramic filter which establishes the IF bandpass. To insure symmetrical turning and selectivity, the IF must be aligned precisely to the center of the filter bandpass, rather than to 10.7MHz as in conventional LC circuits.				
1. FM IF S-CURVE ALIGNMENT	Connect 10.7MHz Radio IF Genescope output to TP1 and ground terminal. Use 10~20pF Capacitor in series with generator lead.	Position of non-interference Minimum Frequency.	Connect Radio IF Genescope input to TP2 and ground terminal.	Adjust FM IFT (T1) and FM DET Coil (T2) until the S-curve becomes symmetrical and straight.
2. FRONT END ALIGNMENT		Tuning knob fully counterclockwise.		Place center of dial pointer on "0" (zero) and secure pointer with bonding material.
3. FM RF TRACKING ALIGNMENT (87MHz)	Connect FM RF Signal Generator through FM Dummy Antenna to FM Antenna terminals. Set generator to 87MHz. Modulate with 1kHz to provide ±75kHz deviation. Set generator output with attenuator as low as possible.	Center of 87MHz calibration mark on dial.	Connect AC VTVM, Distortion Meter and Oscilloscope to TP2 and ground terminal.	Adjust FM OSC Coil (L6) and FM ANT Coil (L5) for best curve form and minimum distortion.
4. (109MHz)	Change generator Setting to 109MHz.	Center of 109MHz calibration mark on dial.	Same as above.	Adjust FM OSC Trimmer (TC2) and FM ANT Trimmer (TC1) for best curve form and deflection.
Note: Repeat Items 3 and 4, and confirm that Tracking Error is minimized and best sensitivity is obtained at each frequency point. Then, set generator to 98MHz and confirm that the pointer is correctly set on the dial plate.				
5. DETECTOR ADJUST-MENT (MINIMUM T.H.D.)	Connect FM RF Signal Generator to FM ANT terminals. Set generator output level to 60dB at 98MHz ±2kHz.	Center of 98MHz calibration mark on dial.	Connect Harmonic Distortion Meter and Oscilloscope to TP2 and ground terminal.	Adjust FM DET (T2) for minimum gain and best linearity.
6. PLL IC FREE RUN FREQUENCY ADJUST-MENT (19kHz)	Same as above.	Same as above.	Connect 390Ω Resistor and Fre-quency Counter between IC5 (Pin No.6) and ground terminal.	Adjust VR1 in multiplex circuit to obtain 38kHz ±200Hz on Frequency Counter.

Use a screwdriver with plastic grip for all adjustments.

DIAL CORD STRINGING



DIAL CORD KNOTTING

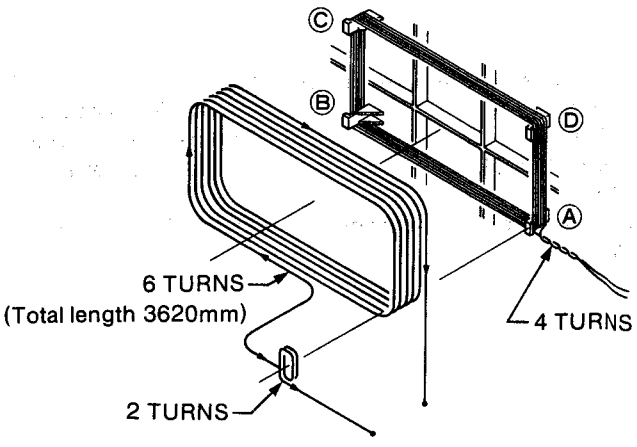


NOTE: Check to see that the dial cord is correctly strung by turning the dial.

AM ANTENNA COIL STRINGING

REPLACEMENT OF AM ANTENNA COIL

1. Wind twice the enamel lead counterclockwise on to the boss A right inside of the cabinet as illustrated.
2. Wind six times the enamel lead clockwise in alphabetical order (A → B → C → D) without slackening as illustrated.
3. Twist four times the beginning and terminal of leads together to make string as illustrated.
4. Shave 15mm in length of the enamel surface of both leads end expose the copper part.
5. Wind the antenna coil lead on to the AM antenna terminal of the RF/Audio P.C.Board and solder it.



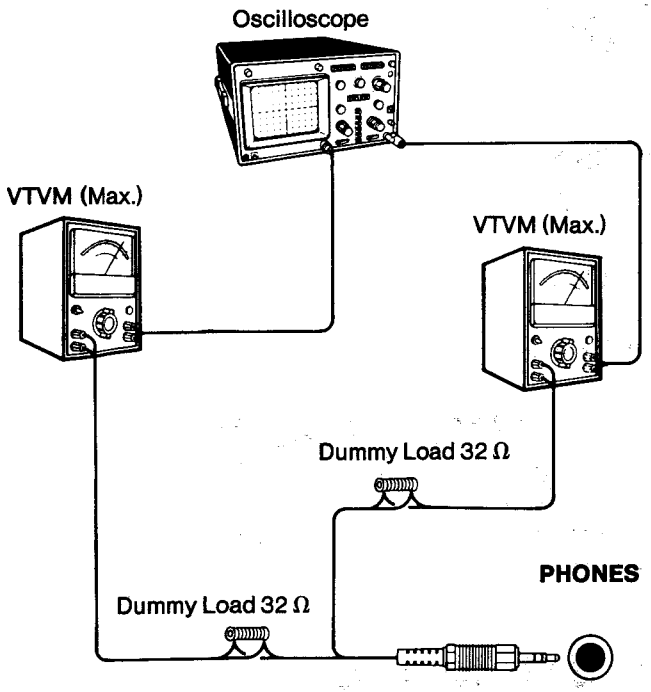
TAPE DECK ELECTRICAL ADJUSTMENTS

EQUIPMENT REQUIRED

- VTVM (2 sets)
- Frequency Counter
- Dummy Load (32Ω)
- Dualtrace Oscilloscope
- Test Tapes
  - ‡ 3kHz Test Tape (Example: TEAC MTT-111) for Tape Speed Adjustment
  - ‡ 10kHz Test Tape (Example: TEAC MTT-114) for Head Azimuth Adjustment
- Alignment Tool

HEAD AZIMUTH ADJUSTMENT

Connect a dualtrace oscilloscope and a VTVM to both channel outputs of the headphone jack as illustrated.



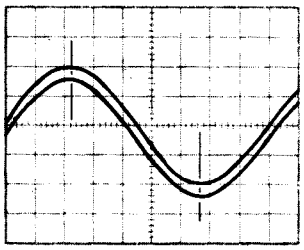
Then, set the dualtrace oscilloscope as follows:

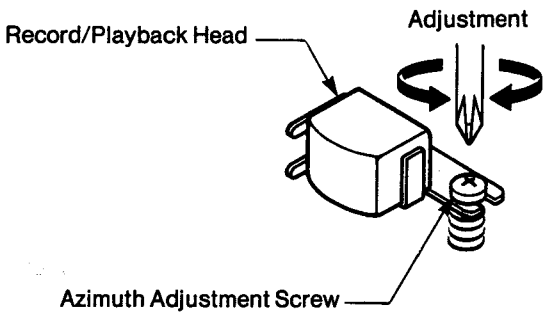
- ‡ MODE ..... CHOP (chopped)
- ‡ SOURCE ..... INT (internal), CH1 or CH2
- ‡ SWEEP MODE ..... AUTO (automatic)

NOTE:
Adjust the field on the oscilloscope with the VOLT. ADJ. and TIME ADJ.

1. Insert a 10kHz test tape (Example: TEAC MTT-114) into the cassette compartment.

2. While playing back the test tape, turn the azimuth adjusting screw until the wave forms of the right and left channels are superimposed and set to optimum at maximum reading on the VTVM.





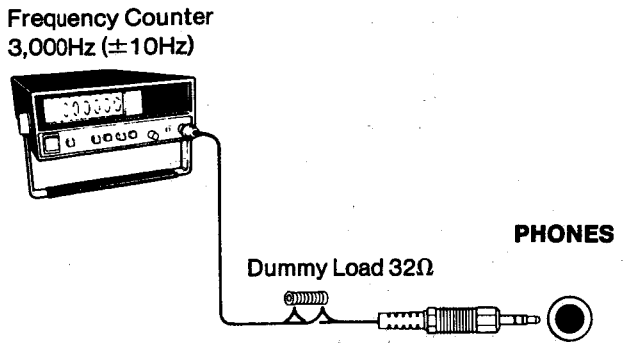
3. After the adjustment, secure the adjusting screw with paint or glue.

TAPE DECK ELECTRICAL ADJUSTMENTS (Continued)

NORMAL TAPE SPEED ADJUSTMENT

Adjustment of 1 Side

1. Connect a frequency counter to the left or right channel output of the headphone jack as illustrated. Then, insert a 3kHz test tape (Example: TEAC MTT-111) into the cassette compartment.



2. Remove the Turntable Unit and adjust the tape speed by slowly turning the potentiometer inside the Motor of 1 side until the frequency counter reads 3,000Hz (±10Hz).

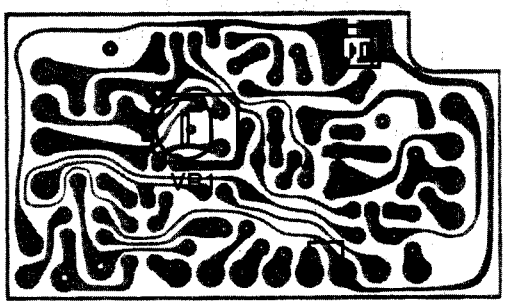
Adjustment of 2 Side

1. Adjust the potentiometer inside the Motor of 2 side by following the same procedure as in 1 side.

DOUBLE TAPE SPEED ADJUSTMENT

1. Connect the frequency counter as the same way as the normal speed adjustment.

2. Unit is set a Double Speed Mode and two terminals on Tape Control P.C.Board (shown below) are connected with wire.



Connected with wire.

TAPE CONTROL P.C.BOARD BOTTOM VIEW

3. First play back the test tape on Tape 1 side and observe the figure of the Frequency Counter. Then play back the test tape on Tape 2 side and adjust the VR1 until the figure of the Frequency Counter shows −30Hz ~ 0Hz against on Tape 1.

P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description				Q'ty
	MAIN P.C.B. ASSY					
60	141-0-1939-12481	Main P.C.B. Assy				1
	4-2262-25020	Main P.C.B.				1
	4-2249-71080	Poli Varicon				1
or	4-2249-71081	Poli Varicon				1
	⚠ 4-2349-20250	Fuse T2.0A				1
VR1	4-2222-01400	Potentiometer (B-10kΩ)				1
CF1	4-2272-00300	Ceramic Filter 10.7MHz				1
SW1	4-2319-78710	Push Switch 5Key (Function)				1
SW2	4-2319-78700	Slide Switch 10 (Rec/Play)				1
BPF1	4-2539-72440	Band Pass Filter				1
L1	4-2559-70250	Bias Trap Coil				1
L2	4-2559-70250	Bias Trap Coil				1
L3	4-2539-70301	Micro Inductor				1
L4	4-2532-00470	Choke Coil 470μH				1
L5	4-2599-71190	FM RF Coil				1
L6	4-2589-72900	FM OSC Coil				1
T1	4-2569-71970	FM IFT				1
T2	4-2569-72010	FM DET Coil				1
T3	4-2579-72080	AM ANT Coil				1
T4	4-2569-72000	AM IFT				1
T5	4-2569-71980	AM OSC Coil				1
T6	4-2569-71990	AM DET Coil				1
W13	4-2359-78765	Connector 5P Assy				1
	4-2352-01940	Fuse Clip				2
	111-2-6220-11100	Wire Wrap Terminal				22
	CAPACITORS					
C1	CC5-6-1500-KD00C	Ceramic	560pF	50V	±10%	1
C2	CC5-6-1500-KD00C	Ceramic	560pF	50V	±10%	1
C3	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C4	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C5	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C6	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C7	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C8	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C9	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C10	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C11	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C12	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C13	CM1-0-3500-K00SV	Mylar	0.01μF	50V	±10%	1
C14	CM1-0-3500-K00SV	Mylar	0.01μF	50V	±10%	1
C15	CD1-0-7160-0001V	Electrolytic	100μF	16V		1
C16	CD1-0-7160-0001V	Electrolytic	100μF	16V		1
C17	CC5-6-1500-KD00C	Ceramic	560pF	50V	±10%	1
C18	CC5-6-1500-KD00C	Ceramic	560pF	50V	±10%	1
C19	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C20	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C21	CC4-7-1500-KD00C	Ceramic	470pF	50V	±10%	1
C22	CC4-7-1500-KD00C	Ceramic	470pF	50V	±10%	1
C23	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C24	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C25	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C26	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C27	CD3-3-5500-0001V	Electrolytic	3.3μF	50V		1
C28	CD3-3-5500-0001V	Electrolytic	3.3μF	50V		1
C29	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C30	CD2-2-763A-0001V	Electrolytic	220μF	6.3V		1
C31	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C32	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C33	CM1-0-3500-K00SV	Mylar	0.01μF	50V	±10%	1
C34	CM1-0-3500-K00SV	Mylar	0.01μF	50V	±10%	1
C35	CC8-2-1500-KD00C	Ceramic	820pF	50V	±10%	1
C36	CC8-2-1500-KD00C	Ceramic	820pF	50V	±10%	1

Ref. No.	Part No.	Description				Q'ty
C37	CC3-3-1500-KD00C	Ceramic	330pF	50V	±10%	1
C38	CC3-3-1500-KD00C	Ceramic	330pF	50V	±10%	1
C39	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C40	CC1-0-3500-KE00C	Ceramic	0.01μF	50V	±10%	1
C41	CM6-8-3500-J00TV	Mylar	0.068μF	50V	±5%	1
C42	CM5-6-2500-J00BV	Mylar	0.0056μF	50V	±5%	1
C43	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C44	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
C45	CC4-7-0500-KD00C	Ceramic	47pF	50V	±10%	1
C46	CC4-7-0500-KD00C	Ceramic	47pF	50V	±10%	1
C47	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C48	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C49	CC1-0-1500-KE00C	Ceramic	100pF	50V	±10%	1
C50	CC1-0-1500-KE00C	Ceramic	100pF	50V	±10%	1
C51	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C52	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C53	CC1-0-2500-ZG00C	Ceramic	0.001μF	50V	+80,-20%	1
C54	CC2-2-0500-KCH0C	Ceramic	22pF	50V	±10%	1
C55	CC5-0-A500-CD00C	Ceramic	5pF	50V	±0.2pF	1
C56	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C57	CC1-5-0500-KCH0C	Ceramic	15pF	50V	±10%	1
C58	CC2-0-0500-JCH0C	Ceramic	20pF	50V	±5%	1
C59	CC1-0-0500-DCH0C	Ceramic	10pF	50V	±0.5pF	1
C60	CC2-2-3500-ZG00C	Ceramic	0.022μF	50V	+80,-20%	1
C61	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C63	CC1-0-2500-ZG00C	Ceramic	0.001μF	50V	+80,-20%	1
C64	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C65	CC2-2-3500-ZG00C	Ceramic	0.022μF	50V	+80,-20%	1
C66	CC4-7-3500-ZG00C	Ceramic	0.047μF	50V	+80,-20%	1
C67	CC8-0-A500-CCH0C	Ceramic	8pF	50V	±0.2pF	1
C68	CC4-7-3500-ZG00C	Ceramic	0.047μF	50V	+80,-20%	1
C69	CC2-2-3500-ZG00C	Ceramic	0.022μF	50V	+80,-20%	1
C70	CC4-7-3500-ZG00C	Ceramic	0.047μF	50V	+80,-20%	1
C71	CD2-2-6100-0001V	Electrolytic	22μF	10V		1
C72	CC2-2-1500-KD00C	Ceramic	220pF	50V	±10%	1
C73	CD4-7-4500-0001V	Electrolytic	0.47μF	50V		1
C74	CD1-0-7100-0001V	Electrolytic	100μF	10V		1
C75	CC2-2-3500-ZG00C	Ceramic	0.022μF	50V	+80,-20%	1
C76	CD1-0-6160-0001V	Electrolytic	10μF	16V		1
C77	CD1-0-5500-0001V	Electrolytic	1μF	50V		1
C78	CD3-3-5500-0001V	Electrolytic	3.3μF	50V		1
C79	CS1-0-2500-K000V	Polystyroul	0.001μF	50V	±10%	1
C80	CD3-3-5500-0001V	Electrolytic	3.3μF	50V		1
C81	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C82	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C83	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C84	CD2-2-5500-0001V	Electrolytic	2.2μF	50V		1
C85	CD4-7-6100-0001V	Electrolytic	47μF	10V		1
C86	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C87	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C88	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C89	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C90	CD2-2-8250-0001V	Electrolytic	2200μF	25V		1
C91	CD2-2-7160-0006V	Electrolytic	220μF	16V		1
C92	CD1-0-7160-0006V	Electrolytic	100μF	16V		1
C93	CC2-2-3500-ZG00C	Ceramic	0.022μF	50V	+80,-20%	1
C94	CC2-2-3500-ZG00C	Ceramic	0.022μF	50V	+80,-20%	1
C95	CC2-7-1500-KD00C	Ceramic	270pF	50V	±10%	1
C96	CC2-7-1500-KD00C	Ceramic	270pF	50V	±10%	1
C97	CD1-0-763A-0006V	Electrolytic	100μF	6.3V		1
C98	CD1-0-763A-0006V	Electrolytic	100μF	6.3V		1
C99	CD1-0-8160-0006V	Electrolytic	1000μF	16V		1
C100	CD1-0-8160-0006V	Electrolytic	1000μF	16V		1
C101	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description				Q'ty
C102	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C103	CD1-0-7160-0006V	Electrolytic	100μF	16V		1
C104	CD1-0-7160-0006V	Electrolytic	100μF	16V		1
C105	CM1-8-4500-J00SV	Mylar	0.18μF	50V	±5%	1
C106	CM1-8-4500-J00SV	Mylar	0.18μF	50V	±5%	1
C107	CD3-3-7250-0006V	Electrolytic	330μF	25V		1
C108	CD4-7-6250-0001V	Electrolytic	47μF	25V		1
C110	CD4-7-6100-0001V	Electrolytic	47μF	10V		1
C111	CM3-3-2500-K00SV	Mylar	0.0033μF	50V	±10%	1
C112	CM3-3-2500-K00SV	Mylar	0.0033μF	50V	±10%	1
C113	CC1-0-3500-ZG00C	Ceramic	0.01μF	50V	+80,-20%	1
C114	CD4-7-6160-0001V	Electrolytic	47μF	16V		1
C115	CC2-2-3500-ZG00C	Ceramic	0.022μF	50V	+80,-20%	1
C116	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
C117	CM2-2-3500-K00SV	Mylar	0.022μF	50V	±10%	1
	SEMICONDUCTORS					
D1	202-5-2500-13543	Diode, DS 135 D				1
D2	202-5-2500-13543	Diode, DS 135 D				1
D3	202-5-2500-13543	Diode, DS 135 D				1
D4	202-5-2500-13543	Diode, DS 135 D				1
D5	202-5-1410-00110	Diode, GMA 01				1
D6	205-5-9040-44210	Diode, DS 442				1
D7	202-5-1410-00110	Diode, GMA 01				1
D8	4-2029-70791	Diode, ITT 410 B				1
D9	202-5-2500-13543	Diode, DS 135 D				1
D10	202-5-3210-13012	Zener Diode, GZA 13Y				1
D11	202-5-3210-10013	Zener Diode, GZA 10Z				1
D12	202-5-1410-00110	Diode, GMA 01				1
D13	4-2029-72050	Zener Diode, MTZ 5.1C				1
IC1	206-5-0793-16010	IC, LA 3160				1
IC2	206-5-0793-16010	IC, LA 3160				1
IC3	4-2069-75280	IC, TA 7358 AP				1
IC4	4-2069-71730	IC, TA 7640 AP				1
IC5	4-2069-71660	IC, TA 7343 P				1
IC6	207-5-1784-50810	IC, LA 4508				1
Q1	4-2039-71441	Transistor, 2SD 1406				1
Q2	203-5-5083-33155	Transistor, 2SC 3331				1
Q3	203-5-5000-53660	Transistor, 2SC 536				1
Q4	203-5-5000-53660	Transistor, 2SC 536				1
Q5	203-5-5000-53660	Transistor, 2SC 536				1
Q6	203-5-5000-53660	Transistor, 2SC 536				1
Q7	203-5-5000-53660	Transistor, 2SC 536				1
Q8	203-5-5000-53660	Transistor, 2SC 536				1
Q9	203-5-5000-53660	Transistor, 2SC 536				1
Q10	203-5-5000-53660	Transistor, 2SC 536				1
Q11	203-5-5000-53660	Transistor, 2SC 536				1
Q12	203-5-5000-53660	Transistor, 2SC 536				1
Q13	203-5-4570-73470	Transistor, 2SD 734				1
Q14	203-5-7000-93060	Transistor, 2SC 930				1
	RESISTORS					
R1	401 024 7707	CARBON 100K JA 1/6W				1
R2	401 024 7707	CARBON 100K JA 1/6W				1
R3	401 025 0004	CARBON 120K JA 1/6W				1
R4	401 025 0004	CARBON 120K JA 1/6W				1
R5	401 027 2600	CARBON 5.6K JA 1/6W				1
R6	401 027 2600	CARBON 5.6K JA 1/6W				1
R7	401 026 0409	CARBON 27 JA 1/6W				1
R8	401 026 0409	CARBON 27 JA 1/6W				1
R9	401 026 4308	CARBON 3.3K JA 1/6W				1
R10	401 026 4308	CARBON 3.3K JA 1/6W				1
R11	401 026 7002	CARBON 3.9K JA 1/6W				1
R12	401 026 7002	CARBON 3.9K JA 1/6W				1

Ref. No.	Part No.	Description	Q'ty
R13	401 024 7400	CARBON 10K JA 1/6W	1
R14	401 024 7400	CARBON 10K JA 1/6W	1
R15	401 026 9907	CARBON 4.7K JA 1/6W	1
R16	401 026 9907	CARBON 4.7K JA 1/6W	1
R17	401 012 4503	CARBON 100 JA 1/4W	1
R18	401 024 6700	CARBON 100 JA 1/6W	1
R19	401 024 7707	CARBON 100K JA 1/6W	1
R20	401 024 7707	CARBON 100K JA 1/6W	1
R21	401 024 7707	CARBON 100K JA 1/6W	1
R22	401 024 7707	CARBON 100K JA 1/6W	1
R23	401 027 2600	CARBON 5.6K JA 1/6W	1
R24	401 027 2600	CARBON 5.6K JA 1/6W	1
R25	401 025 0004	CARBON 120K JA 1/6W	1
R26	401 025 0004	CARBON 120K JA 1/6W	1
R27	401 026 0409	CARBON 27 JA 1/6W	1
R28	401 026 0409	CARBON 27 JA 1/6W	1
R29	401 026 4308	CARBON 3.3K JA 1/6W	1
R30	401 026 4308	CARBON 3.3K JA 1/6W	1
R31	401 026 7002	CARBON 3.9K JA 1/6W	1
R32	401 026 7002	CARBON 3.9K JA 1/6W	1
R33	401 024 7400	CARBON 10K JA 1/6W	1
R34	401 024 7400	CARBON 10K JA 1/6W	1
R35	401 027 2600	CARBON 5.6K JA 1/6W	1
R36	401 027 2600	CARBON 5.6K JA 1/6W	1
R37	401 024 7400	CARBON 10K JA 1/6W	1
R38	401 024 7400	CARBON 10K JA 1/6W	1
R39	401 025 1902	CARBON 15K JA 1/6W	1
R40	401 025 1902	CARBON 15K JA 1/6W	1
R41	401 013 6407	CARBON 12K JA 1/4W	1
R42	401 013 6407	CARBON 12K JA 1/4W	1
R43	401 027 0309	CARBON 47K JA 1/6W	1
R44	401 024 7400	CARBON 10K JA 1/6W	1
R45	401 025 7102	CARBON 22 JA 1/6W	1
R46	401 024 7004	CARBON 1K JA 1/6W	1
R47	401 024 8001	CARBON 1M JA 1/6W	1
R48	401 024 8001	CARBON 1M JA 1/6W	1
R49	401 024 7707	CARBON 100K JA 1/6W	1
R50	401 024 7707	CARBON 100K JA 1/6W	1
R51	401 025 0004	CARBON 120K JA 1/6W	1
R52	401 025 0004	CARBON 120K JA 1/6W	1
R53	401 024 7004	CARBON 1K JA 1/6W	1
R54	401 024 7004	CARBON 1K JA 1/6W	1
R55	401 024 7707	CARBON 100K JA 1/6W	1
R56	401 024 7707	CARBON 100K JA 1/6W	1
R57	401 016 1508	CARBON 22 JA 1/4W	1
R58	401 026 3707	CARBON 33 JA 1/6W	1
R59	401 027 5007	CARBON 68 JA 1/6W	1
R60	401 024 7004	CARBON 1K JA 1/6W	1
R61	401 026 3905	CARBON 330 JA 1/6W	1
R62	401 026 4605	CARBON 33K JA 1/6W	1
R63	401 027 5908	CARBON 68K JA 1/6W	1
R64	401 020 2003	CARBON 4.7K JA 1/4W	1
R65	401 024 7707	CARBON 100K JA 1/6W	1
R66	401 024 7707	CARBON 100K JA 1/6W	1
R67	401 012 8105	CARBON 100K JA 1/4W	1
R68	401 025 7102	CARBON 22 JA 1/6W	1
R69	401 012 4503	CARBON 100 JA 1/4W	1
R70	401 024 7004	CARBON 1K JA 1/6W	1
R71	401 027 8602	CARBON 8.2K JA 1/6W	1
R72	401 025 8703	CARBON 220K JA 1/6W	1
R73	401 026 4308	CARBON 3.3K JA 1/6W	1
R74	401 026 4308	CARBON 3.3K JA 1/6W	1
R75	401 027 5502	CARBON 6.8K JA 1/6W	1
R76	401 027 5502	CARBON 6.8K JA 1/6W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R77	401 024 7707	CARBON 100K JA 1/6W	1
R78	401 024 7707	CARBON 100K JA 1/6W	1
R79	401 024 7004	CARBON 1K JA 1/6W	1
R80	401 027 2303	CARBON 560 JA 1/6W	1
R81	401 027 0309	CARBON 47K JA 1/6W	1
R82	401 027 0309	CARBON 47K JA 1/6W	1
R85	402 016 1208	FUSIBLE RES 10 J- 1/2W	1
R86	401 025 1605	CARBON 1.5K JA 1/6W	1
R87	401 025 1605	CARBON 1.5K JA 1/6W	1
R88	401 024 7707	CARBON 100K JA 1/6W	1
R89	401 024 7400	CARBON 10K JA 1/6W	1
R90	401 024 7400	CARBON 10K JA 1/6W	1
R91	401 024 7004	CARBON 1K JA 1/6W	1
R92	401 024 7004	CARBON 1K JA 1/6W	1
R93	401 012 5708	CARBON 1K JA 1/4W	1
R94	401 024 9701	CARBON 12K JA 1/6W	1
R95	401 024 9701	CARBON 12K JA 1/6W	1
R96	401 024 9305	CARBON 1.2K JA 1/6W	1
R97	401 024 9305	CARBON 1.2K JA 1/6W	1
R98	401 025 2305	CARBON 150K JA 1/6W	1
R99	401 025 4606	CARBON 18K JA 1/6W	1
R100	401 025 4606	CARBON 18K JA 1/6W	1
R101	401 012 5708	CARBON 1K JA 1/4W	1
R102	401 026 4308	CARBON 3.3K JA 1/6W	1
R103	401 026 3707	CARBON 33 JA 1/6W	1
	EQUALIZER P.C.B. ASSY		
61	141-0-1939-12490	Equalizer P.C.B. Assy	1
	4-2262-25030	Equalizer P.C.B.	1
VR1	4-2229-76170	Slide Volume (SW-100kΩx2) (100kHz)	1
VR2	4-2229-76170	Slide Volume (SW-100kΩx2) (1kHz)	1
VR3	4-2229-76170	Slide Volume (SW-100kΩx2) (10kHz)	1
VR4	4-2229-76180	Slide Volume (SW-100kΩ) (Balance)	1
VR5	4-2229-76190	Volume (B-100kΩx2) (Volume)	1
	131-2-4208-48300	Spacer LED	1
	CAPACITORS		
C1	CC1-0-1500-KE00C	Ceramic 100pF 50V ±10%	1
C2	CC1-0-1500-KE00C	Ceramic 100pF 50V ±10%	1
C3	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C4	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C5	CC2-2-0500-KD00C	Ceramic 22pF 50V ±10%	1
C6	CC2-2-0500-KD00C	Ceramic 22pF 50V ±10%	1
C7	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C8	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C9	CC3-3-1500-KD00C	Ceramic 330pF 50V ±10%	1
C10	CC3-3-1500-KD00C	Ceramic 330pF 50V ±10%	1
C11	CM2-7-2500-K00SV	Mylar 0.0027μF 50V ±10%	1
C12	CM2-7-2500-K00SV	Mylar 0.0027μF 50V ±10%	1
C13	CM8-2-2500-K00SV	Mylar 0.0082μF 50V ±10%	1
C14	CM8-2-2500-K00SV	Mylar 0.0082μF 50V ±10%	1
C15	CM1-8-2500-K00SV	Mylar 0.0018μF 50V ±10%	1
C16	CM1-8-2500-K00SV	Mylar 0.0018μF 50V ±10%	1
C17	CM6-8-2500-K00SV	Mylar 0.0068μF 50V ±10%	1
C18	CM6-8-2500-K00SV	Mylar 0.0068μF 50V ±10%	1
C19	CD2-2-5500-0001V	Electrolytic 2.2μF 50V	1
C20	CD2-2-5500-0001V	Electrolytic 2.2μF 50V	1
C21	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C22	CD1-0-6160-0001V	Electrolytic 10μF 16V	1
C23	CC8-2-1500-KE00C	Ceramic 820pF 50V ±10%	1
C24	CC8-2-1500-KE00C	Ceramic 820pF 50V ±10%	1
C25	CM2-7-3500-K00SV	Mylar 0.027μF 50V ±10%	1
C26	CM2-7-3500-K00SV	Mylar 0.027μF 50V ±10%	1

Ref. No.	Part No.	Description	Q'ty
C27	CD1-0-7100-0001V	Electrolytic 100μF 10V	1
C28	CD1-0-7100-0001V	Electrolytic 100μF 10V	1
C29	CD2-2-5500-0001V	Electrolytic 2.2μF 50V	1
C30	CD3-3-6160-0001V	Electrolytic 33μF 16V	1
C31	CD4-7-4500-0001V	Electrolytic 0.47μF 50V	1
C33	CC2-2-0500-KD00C	Ceramic 22pF 50V ±10%	1
C34	CC2-2-0500-KD00C	Ceramic 22pF 50V ±10%	1
	SEMICONDUCTORS		
D1	4-2029-73970	L.E.D., SLP-155B	1
D2	4-2029-73970	L.E.D., SLP-155B	1
D3	4-2029-73970	L.E.D., SLP-155B	1
D4	4-2029-73970	L.E.D., SLP-155B	1
D5	4-2029-73970	L.E.D., SLP-155B	1
D6	4-2029-73970	L.E.D., SLP-155B	1
D7	4-2029-73970	L.E.D., SLP-155B	1
IC1	4-2069-74370	IC, TA 7366 P	1
Q1	203-5-5000-53660	Transistor, 2SC 536	1
Q2	203-5-5000-53660	Transistor, 2SC 536	1
Q3	203-5-5000-53660	Transistor, 2SC 536	1
Q4	203-5-5000-53660	Transistor, 2SC 536	1
Q5	203-5-5000-53660	Transistor, 2SC 536	1
Q6	203-5-5000-53660	Transistor, 2SC 536	1
	RESISTORS		
R1	401 024 7400	CARBON 10K JA 1/6W	1
R2	401 024 7400	CARBON 10K JA 1/6W	1
R3	401 026 4902	CARBON 330K JA 1/6W	1
R4	401 026 4902	CARBON 330K JA 1/6W	1
R5	401 024 7004	CARBON 1K JA 1/6W	1
R6	401 024 7004	CARBON 1K JA 1/6W	1
R7	401 024 6700	CARBON 100 JA 1/6W	1
R8	401 024 6700	CARBON 100 JA 1/6W	1
R9	401 024 7400	CARBON 10K JA 1/6W	1
R10	401 024 7400	CARBON 10K JA 1/6W	1
R11	401 024 7004	CARBON 1K JA 1/6W	1
R12	401 024 7004	CARBON 1K JA 1/6W	1
R13	401 027 8602	CARBON 8.2K JA 1/6W	1
R14	401 027 8602	CARBON 8.2K JA 1/6W	1
R15	401 026 9907	CARBON 4.7K JA 1/6W	1
R16	401 026 9907	CARBON 4.7K JA 1/6W	1
R17	401 026 9907	CARBON 4.7K JA 1/6W	1
R18	401 026 9907	CARBON 4.7K JA 1/6W	1
R19	401 025 4606	CARBON 18K JA 1/6W	1
R20	401 025 4606	CARBON 18K JA 1/6W	1
R21	401 025 4606	CARBON 18K JA 1/6W	1
R22	401 025 4606	CARBON 18K JA 1/6W	1
R23	401 027 5502	CARBON 6.8K JA 1/6W	1
R24	401 027 5502	CARBON 6.8K JA 1/6W	1
R25	401 024 9701	CARBON 12K JA 1/6W	1
R26	401 024 9701	CARBON 12K JA 1/6W	1
R27	401 026 4605	CARBON 33K JA 1/6W	1
R28	401 026 4605	CARBON 33K JA 1/6W	1
R29	401 027 9005	CARBON 82K JA 1/6W	1
R30	401 027 9005	CARBON 82K JA 1/6W	1
R31	401 026 4902	CARBON 330K JA 1/6W	1
R32	401 026 4902	CARBON 330K JA 1/6W	1
R33	401 026 6609	CARBON 390 JA 1/6W	1
R34	401 026 6609	CARBON 390 JA 1/6W	1
R35	401 026 7002	CARBON 3.9K JA 1/6W	1
R36	401 026 7002	CARBON 3.9K JA 1/6W	1
R37	401 025 7409	CARBON 220 JA 1/6W	1
R38	401 025 7409	CARBON 220 JA 1/6W	1
R39	401 024 7400	CARBON 10K JA 1/6W	1

P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty
R40	401 024 7400	CARBON 10K JA 1/6W	1
R41	401 024 7400	CARBON 10K JA 1/6W	1
R42	401 024 7400	CARBON 10K JA 1/6W	1
R43	401 025 2305	CARBON 150K JA 1/6W	1
R44	401 027 8602	CARBON 8.2K JA 1/6W	1
R45	401 015 1608	CARBON 180 JA 1/4W	1
R46	401 025 0004	CARBON 120K JA 1/6W	1
R47	401 025 1605	CARBON 1.5K JA 1/6W	1
R48	401 024 7004	CARBON 1K JA 1/6W	1
R49	401 024 7004	CARBON 1K JA 1/6W	1
R50	401 024 7400	CARBON 10K JA 1/6W	1
R51	401 024 7400	CARBON 10K JA 1/6W	1
	SWITCH P.C.B. ASSY		
62	141-0-1939-12500	Switch P.C.B. Assy	1
	4-2262-25040	Switch P.C.B.	1
SW1	4-2319-78720	Push Switch 3Key	1
	RESISTOR		
R1	401 055 0005	OXIDE-MT 120 JB 1/2W	1
	BEAT SWITCH P.C.B. ASSY		
63	141-0-1939-12520	Beat Switch P.C.B. Assy	1
	4-2262-25060	Beat Switch P.C.B.	1
SW1	4-2319-70774	Slide Switch	1
	CAPACITOR		
C1	CC6-8-1500-KE00C	Ceramic 680pF 50V ±10%	1
	SPEAKER TERMINAL P.C.B. ASSY		
64	141-0-1939-12530	Speaker Terminal P.C.B. Assy	1
	4-2262-25070	Speaker Terminal P.C.B.	1
	4-2359-78990	RCA Pin Jack 2P	1
	POWER SWITCH P.C.B. ASSY		
65	141-0-1939-12542	Power Switch P.C.B. Assy	1
	4-2262-25080	Power Switch P.C.B.	1
SW1	⚠ 4-2312-05710	Switch Push Power	1
	4-2372-00830	EC Terminal 1P	2
	111-2-6220-11100	Wire Wrap Terminal	2
	131-2-6114-00210	Cover Safety	1
	CAPACITOR		
C1	⚠ 4-2239-70970	Capacitor 0.01μF 400V	1
	HEADPHONE P.C.B. ASSY		
66	141-0-1939-12550	Headphone P.C.B. Assy	1
	4-2262-25090	Headphone P.C.B.	1
	4-2359-78521	Jack 7P	1
	RESISTORS		
R1	401 012 4503	CARBON 100 JA 1/4W	1
R2	401 012 4503	CARBON 100 JA 1/4W	1
	AUX P.C.B. ASSY		
67	141-0-1939-12560	Aux P.C.B. Assy	1
	4-2262-25100	Aux P.C.B.	1
	4-2352-01750	Pin Jack 2P	1

Ref. No.	Part No.	Description	Q'ty
	TAPE CONTROL P.C.B. ASSY		
68	141-0-1939-12570	Tape Control P.C.B. Assy	1
	4-2262-25110	Tape Control P.C.B.	1
VR1	4-2222-01450	Potentiometer (B-200Ω)	1
SW1	4-2319-73990	Leaf Switch	1
	SEMICONDUCTORS		
D1	202-5-1410-00110	Diode, GMA 01	1
D2	202-5-1410-00110	Diode, GMA 01	1
D3	202-5-1410-00110	Diode, GMA 01	1
D4	202-5-1410-00110	Diode, GMA 01	1
D5	202-5-1410-00110	Diode, GMA 01	1
D6	202-5-1410-00110	Diode, GMA 01	1
Q1	203-5-4921-01260	Transistor, 2SD 1012	1
Q2	203-5-4921-01260	Transistor, 2SD 1012	1
Q3	203-5-4570-73460	Transistor, 2SD 734	1
Q4	203-5-4570-73460	Transistor, 2SD 734	1
Q5	203-5-5000-53660	Transistor, 2SC 536	1
	RESISTORS		
R1	4-2219-71431	LT Resistor 820 OHM	1
R2	401 024 9008	CARBON 120 JA 1/6W	1
R3	401 027 2600	CARBON 5.6K JA 1/6W	1
R4	401 024 7400	CARBON 10K JA 1/6W	1
R5	4-2219-71431	LT Resistor 820 OHM	1
R6	401 027 2600	CARBON 5.6K JA 1/6W	1
R7	401 024 7400	CARBON 10K JA 1/6W	1
R8	401 012 7009	CARBON 10K JA 1/4W	1
R9	401 026 9907	CARBON 4.7K JA 1/6W	1
	FM IND. P.C.B. ASSY		
69	141-0-1939-12580	FM Ind. P.C.B. Assy	1
	4-2262-25120	FM Ind. P.C.B.	1
	131-2-4208-48400	Spacer LED	1
	SEMICONDUCTOR		
D1	4-2029-73970	L.E.D., SLP-155B	1

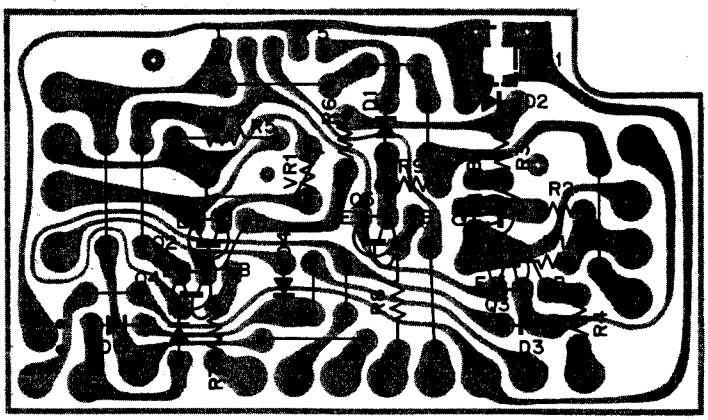
NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.

PRODUCT SAFETY NOTICE

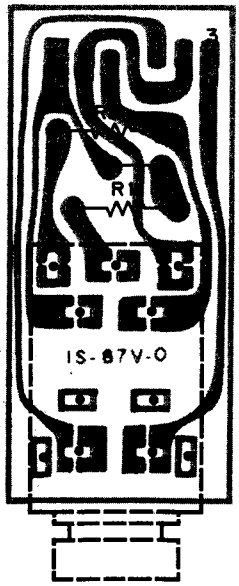
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

TAPE CONTROL P.C.BOARD
(BOTTOM VIEW)



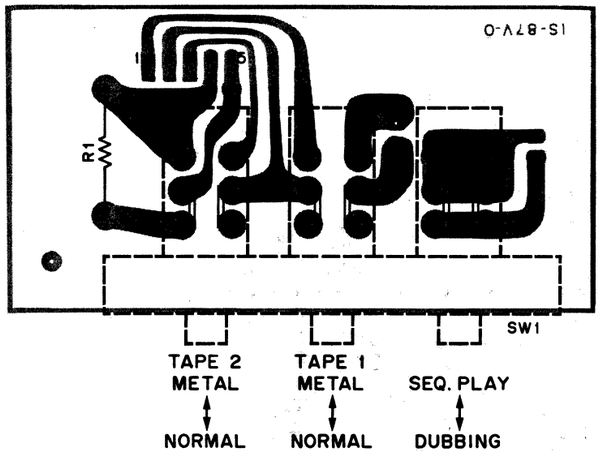
TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q1,2	2SD 1012	8.2V	12.7V	12.7V
Q3,4	2SD 734	−2.8V	11.7V	0V
Q5	2SC 536	−3.3V	12.7V	0V

HEADPHONE P.C.BOARD
(BOTTOM VIEW)

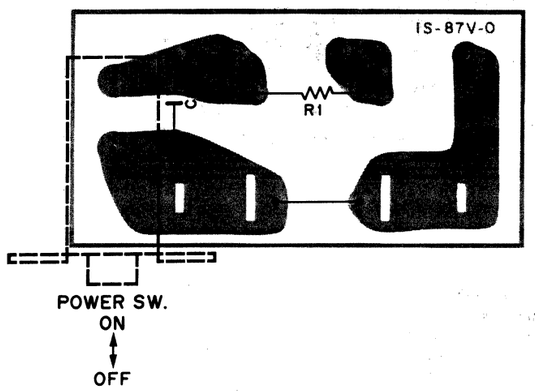


HEADPHONE
JACK

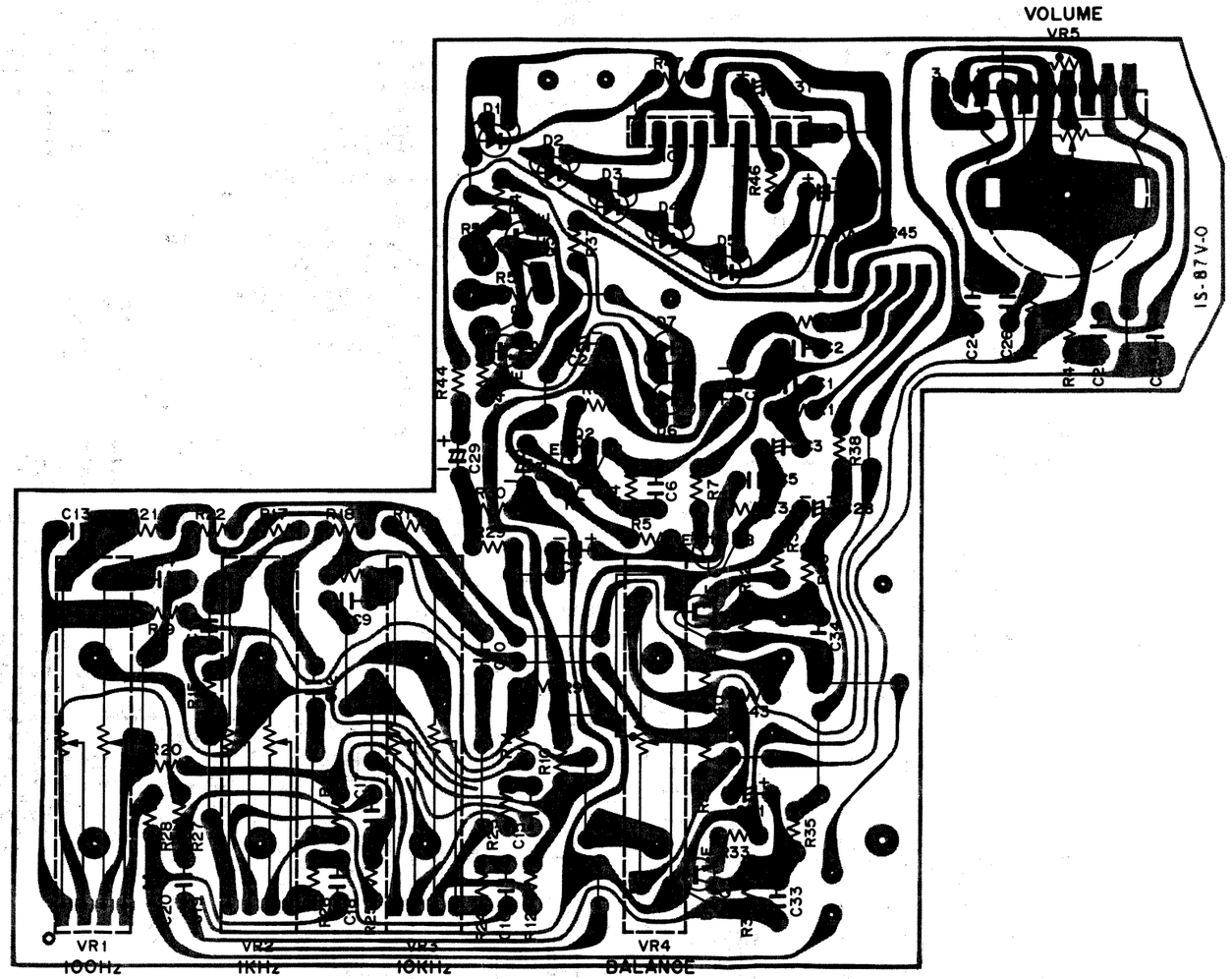
SWITCH P.C.BOARD
(BOTTOM VIEW)



POWER SWITCH P.C.BOARD
(BOTTOM VIEW)



EQUALIZER PRINTED CIRCUIT BOARD
(BOTTOM VIEW)

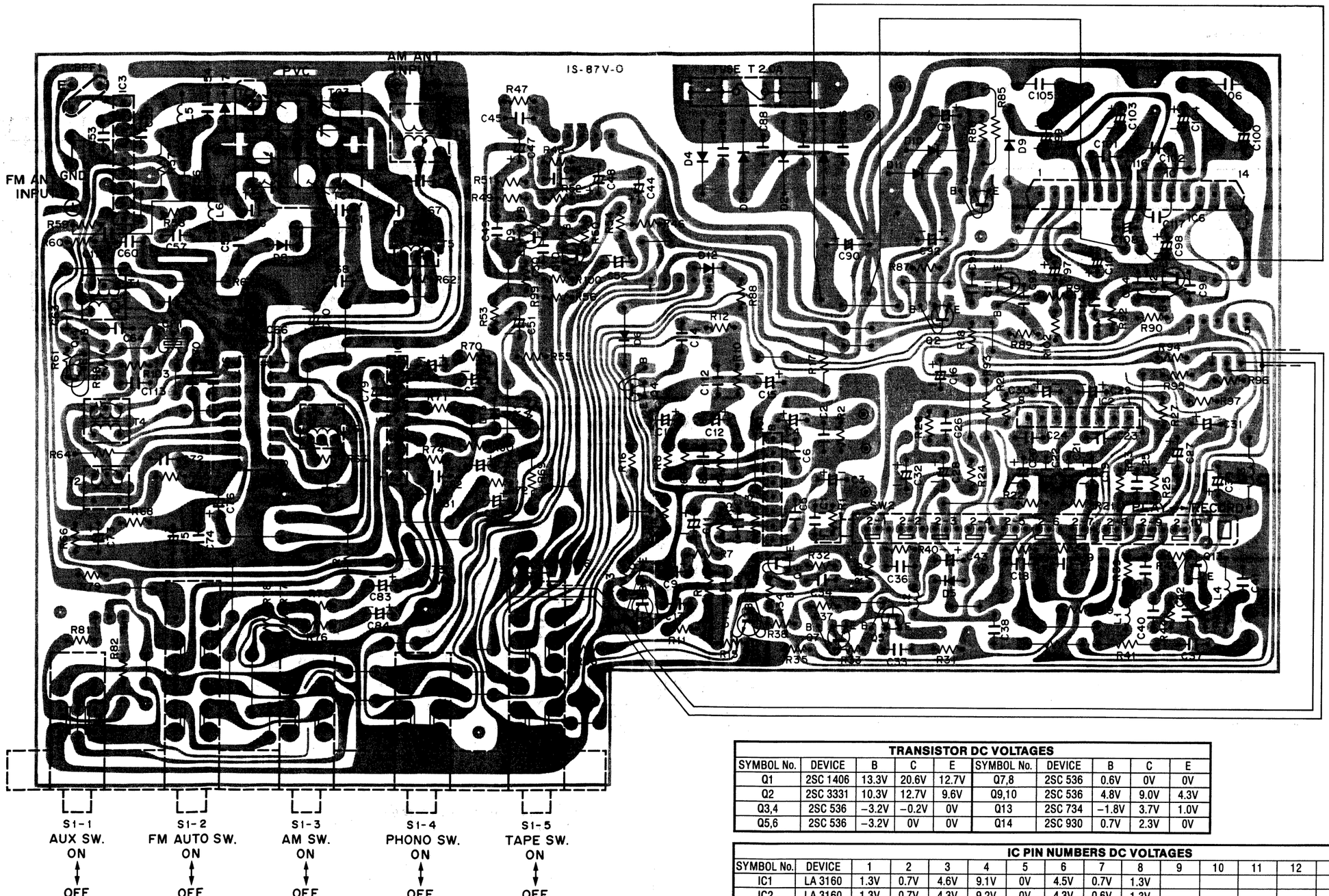


TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q1,2	2SC 536	0.9V	5.2V	0.3V
Q3,4	2SC 536	1.1V	3.4V	0.5V
Q5	2SC 536	−3.3V	−2.4V	0V

IC PIN NUMBERS DC VOLTAGES										
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9
IC1	TA 7366 P	0V	8.4V	8.1V	8.4V	0V	8.6V	2.3V	1.3V	12.7V

MAIN PRINTED CIRCUIT BOARD

(BOTTOM VIEW)



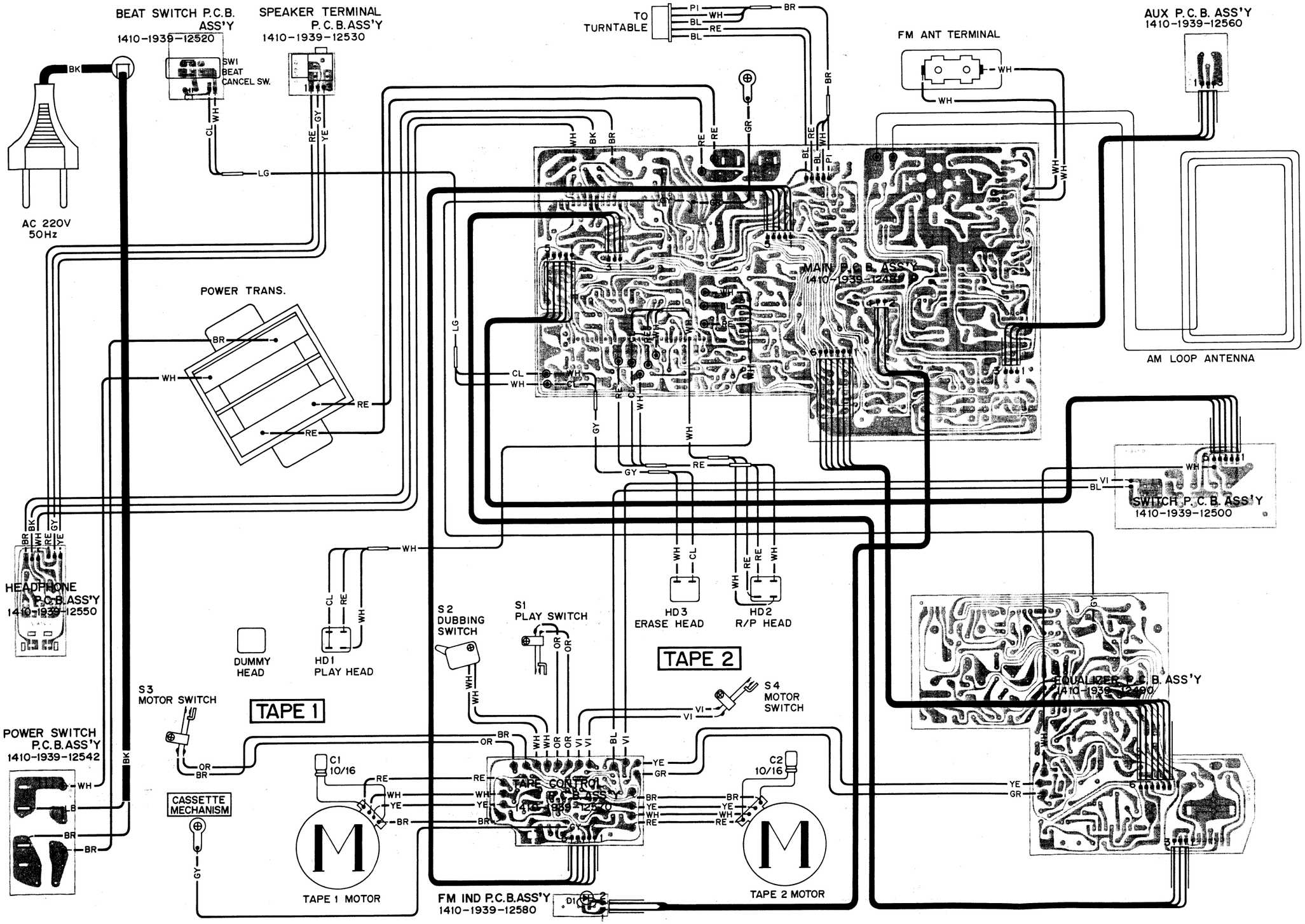
TRANSISTOR DC VOLTAGES

SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q1	2SC 1406	13.3V	20.6V	12.7V	Q7,8	2SC 536	0.6V	0V	0V
Q2	2SC 3331	10.3V	12.7V	9.6V	Q9,10	2SC 536	4.8V	9.0V	4.3V
Q3,4	2SC 536	−3.2V	−0.2V	0V	Q13	2SC 734	−1.8V	3.7V	1.0V
Q5,6	2SC 536	−3.2V	0V	0V	Q14	2SC 930	0.7V	2.3V	0V

IC PIN NUMBERS DC VOLTAGES

SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC1	LA 3160	1.3V	0.7V	4.6V	9.1V	0V	4.5V	0.7V	1.3V								
IC2	LA 3160	1.3V	0.7V	4.3V	9.2V	0V	4.3V	0.6V	1.3V								
IC3	TA 7358 AP	0.8V	1.5V	4.8V	1.5V	0V	4.8V	4.1V	4.8V	5.1V							
IC4	TA 7640 AP	0.2V	0.2V	2.2V	2.3V	0.8V	0.8V	5.0V	0V	1.7V	5.1V	5.1V	1.4V	1.4V	1.4V	1.3V	5.1V
IC5	TA 7343 AP	2.9V	3.9V	5.3V	4.5V	0V	10.7V	4.6V	2.6V	2.6V							
IC6	LA 4508	21.2V	0V	1.1V	10.8V	0V	20.2V	0V	21.6V	20.2V	0.5V	11.0V	1.1V	0V	0V		

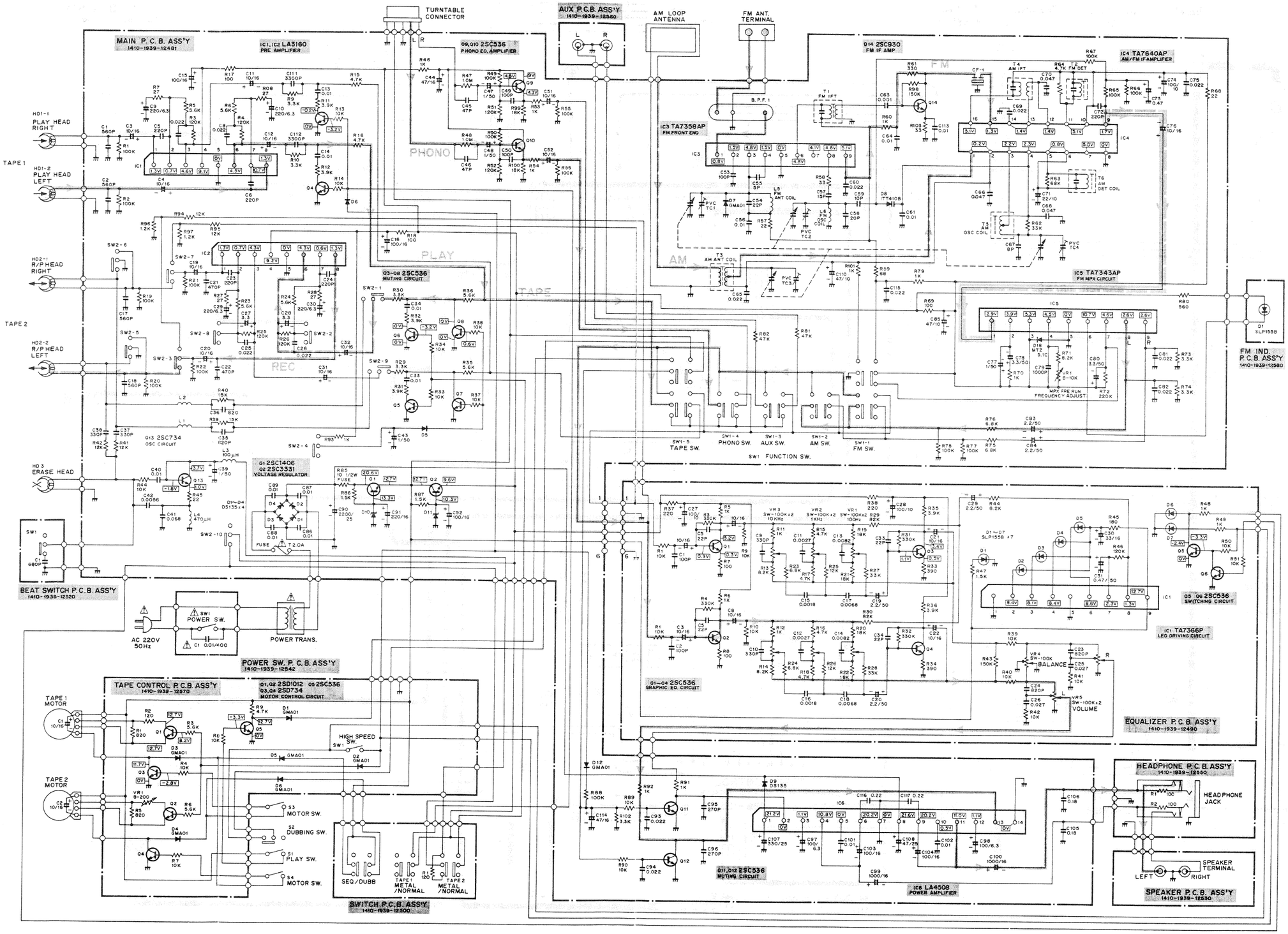
POINT TO POINT WIRING DIAGRAM



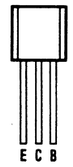
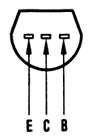
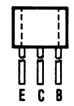
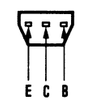
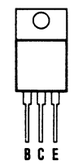
SCHEMATIC DIAGRAM

Signal flow of FM & PLAY

Signal flow of AM & RECORD



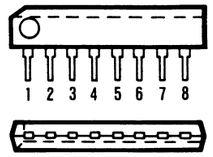
SEMICONDUCTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SC 536 2SC 930 2SC 3331 2SD 734		
2SD 1012		
2SD 1406		
TERMINAL NAME		
B → BASE C → COLLECTOR E → EMITTER		

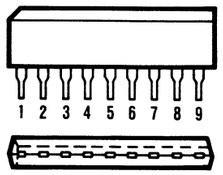
SCHEMATIC DIAGRAM SWITCH POSITIONS

No.	Name	Position
MAIN P.C.B. ASSY		
SW1-1	FM Switch	OFF
SW1-2	AM Switch	OFF
SW1-3	AUX Switch	OFF
SW1-4	PHONO Switch	OFF
SW1-5	TAPE Switch	OFF
SW2	REC/PLAY Switch	OFF
SWITCH P.C.B. ASSY		
SW1-1	SEQ./DUBB. Switch	DUBBING
SW1-2	TAPE 1 Switch	NORMAL
SW1-3	TAPE 2 Switch	NORMAL
BEAT CANCEL SWITCH P.C.B. ASSY		
SW1	BEAT CANCEL Switch	ON
POWER SWITCH P.C.B. ASSY		
SW1	POWER Switch	OFF
TAPE CONTROL P.C.B. ASSY		
SW1	HIGH SPEED Switch	OFF
CASSETTE MECHANISM		
S1	PLAY Switch	OFF
S2	DUBBING Switch	ON
S3	TAPE 1 MOTOR Switch	OFF
S4	TAPE 2 MOTOR Switch	OFF

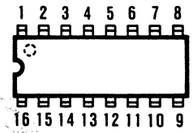
LA 3160 FRONT/BOTTOM VIEWS



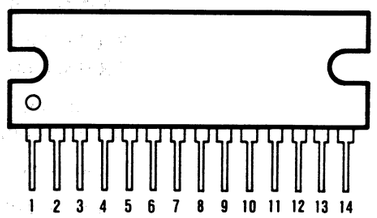
TA 7343 AP / TA 7358 AP / TA 7366 P FRONT/BOTTOM VIEWS



TA 7640 AP BOTTOM VIEW



LA 4508 BOTTOM VIEW



NOTES:
1. All resistors values are indicated in "ohm" ($K=10^3$, $M=10^6$).
2. All capacitors values are indicated in "μF" ($P=10^{-12}$).
3. All voltages indicated on the schematics are measured under the following conditions.
   a. Use a V.T.V.M.
   b. All voltages ±10 % with respect to chassis ground.
   c. No signals at input terminals.
   d. AC input at 220 volts 50 Hz
4. This is a basic schematic diagram.

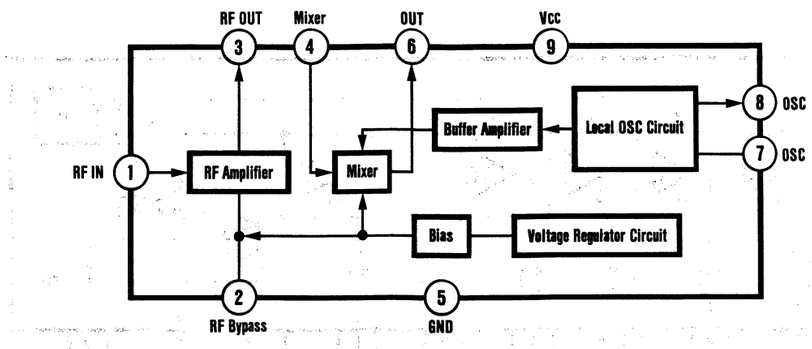
Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

PRODUCT SAFETY NOTICE

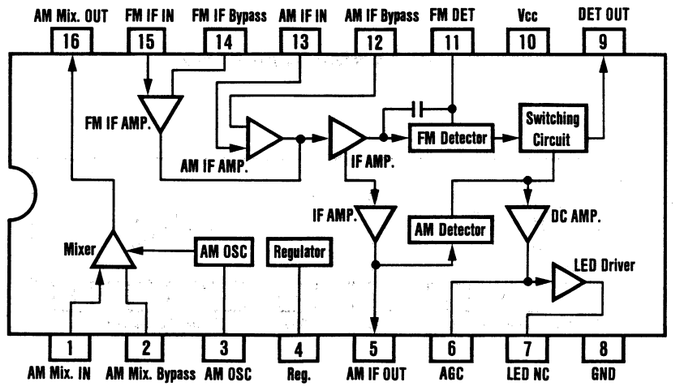
Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual.
Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

INTEGRATED CIRCUIT BLOCK DIAGRAM

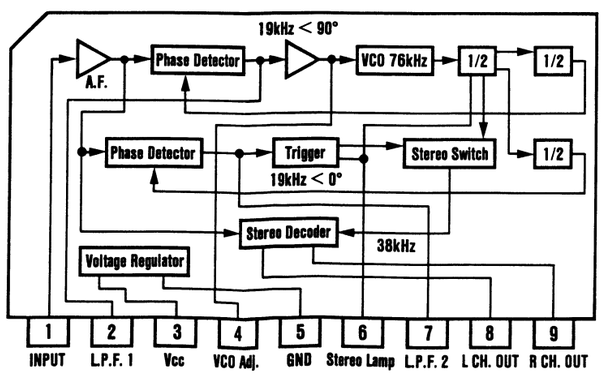
FM FRONT END IC TA 7358 AP



AM/FM IF AMP IC TA 7640 AP

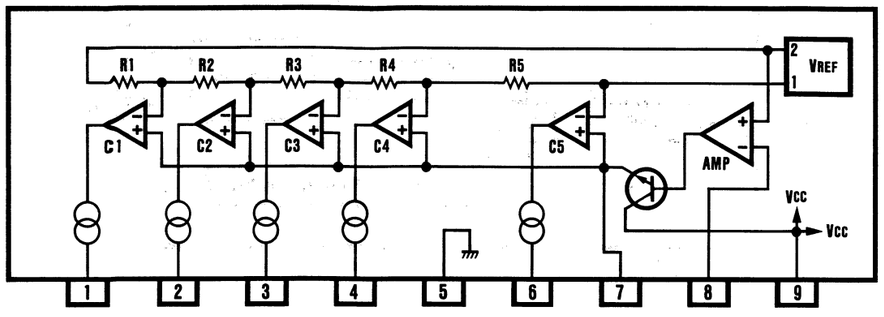


FM MPX IC TA 7343 AP

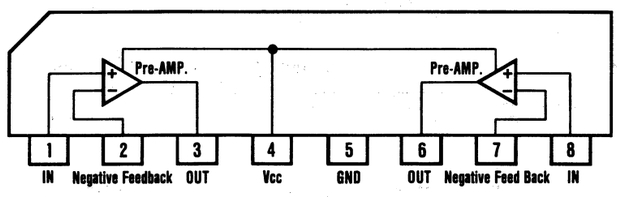


INTEGRATED CIRCUIT BLOCK DIAGRAM (Continued)

LED DRIVER IC TA 7366 P



REC/PLAY AMP IC LA 3160



Bezeichnung/Description
SERVICE MANUAL
Teile-Nr./Parts No.
WM18340
Lagerort
36A03
Menge/Quantity
2
LS-Nr.
417803 / 4
FISHER HiFi Service GmbH

FISHER

FISHER Hi-Fi Europa Vertriebs GmbH

Stahlgruberring 4
8000 München 82
Tel: 089/420 45-0
Tlx: 524033

Technisches Labor/
Qualitätskontrolle — Durchwahl –120/121

Funkstörmeßlabor — –127/128

Service-Zentrale
- Color TV — –166
- Hi-Fi/Audio — –168
- Video — –172
- Autoradio — –170
- Ersatzteillager — –155/156
- Techn. Schulung — –174

Weitere Service-Zentralen in BRD (keine Ersatzteilbestellungen)

Offenbach/ Frankfurt	Frankfurter Straße 121 6050 Offenbach	Tel: 069/88 80 45/48 Tlx: 4 12 558	Hamburg	Spaldingstraße 1 2000 Hamburg	Tel: 040/23 12 23/24 Tlx: 2 173 839
Military	Frankfurter Straße 121 6050 Offenbach	Tel: 069/88 80 45/48 Tlx: 4 12 558	Ditzingen	Max-Eyth-Straße 11 7257 Ditzingen	Tel: 07156/50 88 Tlx: 7 245 278
Düsseldorf-Erkrath	Albert-Einstein-Straße 8 4006 Erkrath 1	Tel: 0211/200 05-0 Tlx: 8 588 563	Berlin (Fisher Vertragswerkstatt)	Drewitz & Kaulbach Eisenacher Straße 53 1000 Berlin 62	Tel: 030/781 20 01 Tlx: 186 460

Unser FISHER-Team steht Ihnen jederzeit gerne zur Verfügung. Ersatzteilbestellungen wickeln Sie bitte ausschließlich mit unserer Service-Zentrale München ab.
Senden Sie uns im Garantiefall die ausgefüllte Garantiekarte ein. Bei unverkauften Lagergeräten des Fachhandels gilt als Garantienachweis eine eidesstattliche Versicherung mit eingetragener Modellbezeichnung und Geräte-Nummer oder ein Liefernachweis. Die gleiche Regelung besteht auch für Reparaturaufträge.
Bitte geben Sie unbedingt die Ersatzteil-Nummer und die Modellbezeichnung an.
Sie sparen so wertvolle Zeit. Vielen Dank.

May/'86/2,000/K **Printed in Japan**

SH022/16.1 411

PRODUCTION CHANGE NOTICE

FISHER

Date:April,2,1987

Please add this notice to the Service Manuals listed below

AUDIO COMPONENT SYSTEM

MC-715

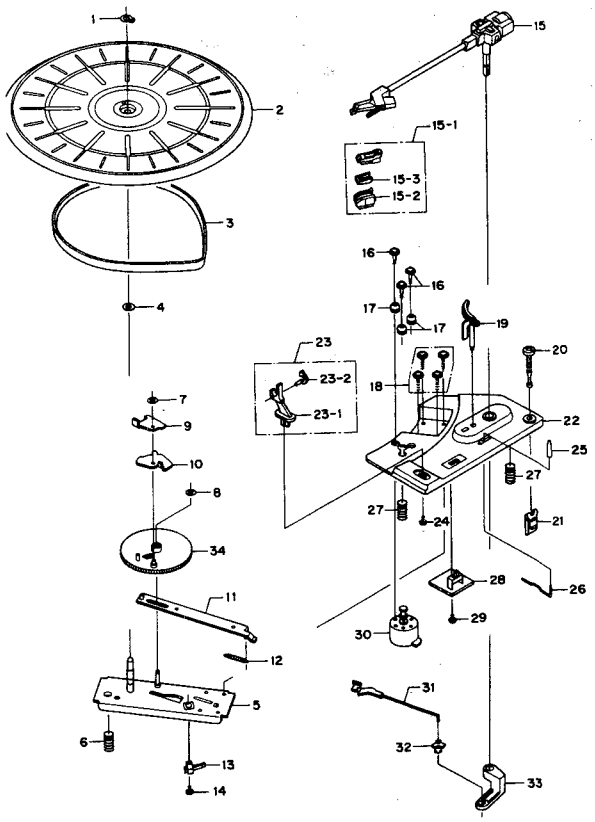
Effective from: Serial No. Running Change

(EUROPE) **REF:WM-18340** **Issue Number 1**

Three types of players are used for the MC-715, two made by Matsushita (FK-102HR-10 and FR-102HR) and one by BSR (BSRQ510-08). The MC-715 Service Manual only includes model FK-102HR-10. The exploded views and parts lists for the other two types can be found below.

RECORD PLAYER PARTS LIST/EXPLODED VIEW

Ref. No.	Part No.	Description	Q'ty
	TURNTABLE		
	4-1342-00802	Player (FR-102HR)	1
1	XUB070FI	Retaining Clip	1
2	FFP-TTA108	Turntable Assy	1
3	FF-GBR011	Belt	1
4	FZ-WAP200	Thrust Washer	1
5	FF-UPAC51	Chassis Assy	1
6	FF-BCP069	Cushion Spring (B)	1
7	XUFM030VI	Retaining Clip	1
8	XUFM030VI	Retaining Clip	1
9	FFP-EPT029Z	Friction Link	1
10	FFP-EPT119	Startiong Link	1
11	FFP-ETA154	Subplate Assy (Including Spring)	1
12	FF-BTN035	Subplate Spring	1
13	VSZLSB1115B1	Leaf Switch	1
14	XTN020+J0050	Screw (Leaf Switch)	1
15	PA-357S-1	Pick-up Arm Assy	1
15-1	CZ-800-1	Cartridge Assy	1
15-2	6-2213-1A	Stylus Cover	1
15-3	6-2339-1	Stylus	1
16	FF-ESC039	Motor Mounting Screws	3
17	FF-GBR017	Cushion Rubbers	3
18	XTW030+S00080	Screw (Chassis)	4
19	FFP-ISP088	Pick-up Lifter	1
20	FF-ESC033	Transit Screw	1
21	FF-BPL004	Transit Spring	1
22	FFP-UCP026	Motor Board	1
23	FF-ETA125	Pick-up Stand Assy	1
23-1	FF-ISP077	Pick-up Stand	1
23-2	FF-ISP002	Pick-up Clamper	1
24	XTN030+J0050FY	Screw (Pick-up Stand)	1
25	FF-ISP036	Cueing Lever Knob	1
26	FF-ABR016	Cueing Lever	1
27	FF-BCP067	Cushion Spring (A)	2
28	FF-ETA152	PCB Assy	1
29	XTN030+J0050FY	Screw (PCB)	1



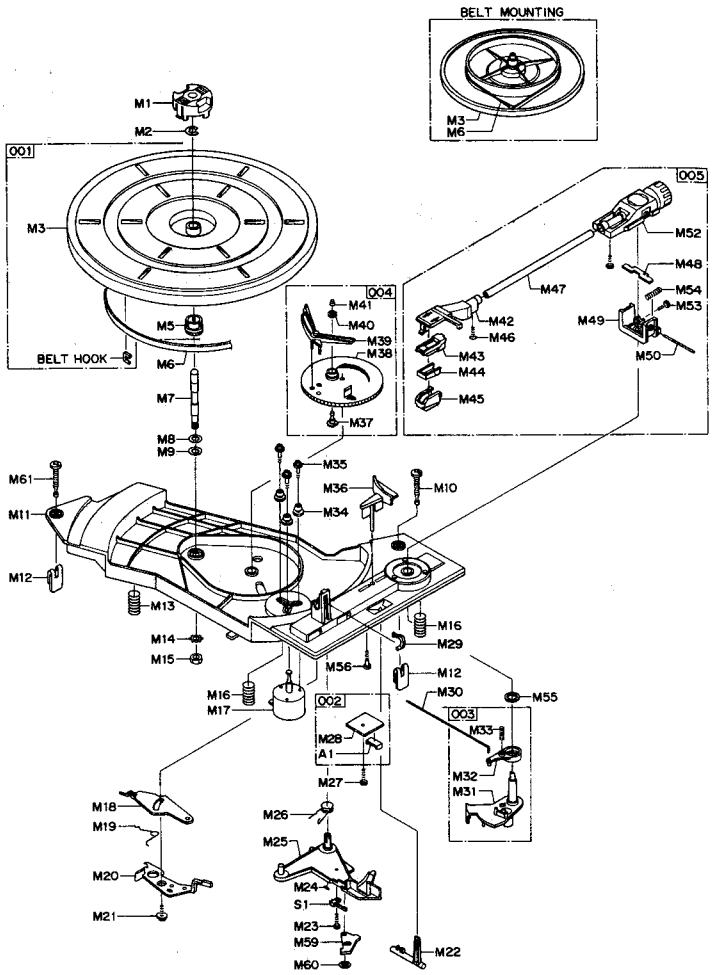
30	FF-ETA151	Partial Motor Assy	1
31	FFP-ETA153	Starting Lever Assy	1
32	FFP-ISP089	Adjusting Knob	1
33	FFP-ISP090	Return Link	1
34	FF-GGI006	Main Gear	1
	FA-RDU398	Lead Wire (Red)	1
	FA-RDU399	Lead Wire (Brown)	1
	FA-RDU400	Lead Wire (Yellow)	1
	FA-RDU401	Lead Wire (Black)	2

REFFERENCE No. WM-20377N

Printed in Japan
April/'87/2,000/K

RECORD PLAYER PARTS LIST/EXPLODED VIEW

Ref. No.	Part No.	Description	Q'ty
	TURNTABLE		
	4-1342-00803	Player(BSR Q510-08)	1
M1	1072000500	Turntable adaptor	1
M2	3130000060	E ring 6ϕ	1
001	0006000500	Turntable assembly	1
(M3)	1008010500	Turntable w/boss	1
(M5)	2007000500	Turntable gear	1
M6	2020000500	Turntable belt	1
M7	1012000520	Turntable spindle	1
M8	2056000278	Poly washer 7.6ϕ x 12ϕ x 0.25t	1
M9	3021210022	Flat washer 5.2ϕ x 12ϕ x 1t	1
M10	1046000278	Transit screw	1
M11	1046100500	Base	1
M12	2038000278	Retaining clip	2
M13	2062000500	Base spring (A)	1
M14	3023110003	W Gear-0003-ZN3A	1
M15	3032100050	Nut 50 ZN3A	1
M16	2056000500	Base spring	2
M17	4031210134	Motor assembly(MMI-6S2R2D)	1
M18	2002000500	Speed shift cam 45	1
M19	2023075410	Speed shift cam spring	1
M20	1006000500	Speed shift cam 33	1
M21	8761300810	7 (Taptite-P) CUP 3008 ZN3A 10D	1
M22	1005200500	Cue lever	1
M23	8711200600	7 (Taptite-P) PAN 2006 ZN3A	1
M24	2002001306	Securing rubber	1
M25	2080000500	Control arm	1
M26	2012000500	Control arm spring	1
M27	8741300800	7 (Taptite-P) BID 3008 ZN3A	1
002	C041051020	Motor supply PCB assembly	1
(M28)	4041051020	Motor supply PCB	1
(A1)	4490501001	S5B-XH side base	1
M29	1019000500	Pick-up tube hook	1
M30	2044000500	Trip rod	1
003	0003000500	Quadrant assembly	1
(M31)	2004400500	Quadrant	1
(M32)	2005200500	Trip clutch	1
(M33)	2042005015	Trip clutch spring	1
M34	2069000500	Grommet (B)	3
M35	2015000284	Screw	3
M36	1070000500	Lift platform	1
004	0004000500	Cam gear assembly	1
(M37)	2058030084	Drive pivot	1
(M38)	2006200500	Cam gear	1
(M39)	2008000500	Trip pawl	1
(M40)	2057030084	Drive pivot washer	1
(M41)	2067030084	Drive spring	1
005	0035000500	Pick up arm assembly	1
(M42)	1012000500	Pick up head	1
(M43)	5230715130	Cartridge (NS-130D) w/stylus	1
(M44)	5240715130	Stylus (DIAMOND)	1
(M45)	5260715130	Cartridge cover	1
(M46)	8345230500	3 (Tapping-1) BID 2305 NI3E	1
(M47)	1010000501	Pick up tube	1
(M48)	2019000500	Pick up hinge lock	1
(M49)	1014000500	Pick up hinge bracket	1
(M50)	2010000500	Pivot pin	1



Ref. No.	Part No.	Description	Q'ty
(M52)	1022000500	Pick up tube body	1
(M53)	3011813014	2 (Machine ISO) PAN 3014 ZN3A	1
(M54)	2017000500	Set down spring	1
M55	2024000500	Poly washer 9.2ϕ x 13ϕ x 0.4t	1
M56	2057000500	7-BID 3014 ZN3A	1
M59	2043100500	Cam	1
M60	2000000631	Push nut 3ϕ	1
M61	1047000278	Transit screw	1
	OTHERS		
S1	4407000047	Leaf switch	1
A2	9011000278	Poly bag 36 x 46 cm	1
A3	9051000500	Rating label	1
A4	9052000500	Carton	1
A5	5280020010	UL tube 1ϕ x 10 mm	1
A6	9004000500	Inner plate	1
A7	9005000500	Inner plate (A)	1

NOTES:

1. Parts order must contain Model Number, Part Number and Description.
2. Ordering quantity of screws and resistors must be multiple of 10 pcs.